



Overcoming barriers and making higher education more accessible to Vocational
Education and Training students from low socioeconomic backgrounds:
A Malaysian perspective

By

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A thesis submitted in fulfilment of the requirements for
the degree of Doctor of Philosophy

University of Tasmania

Launceston, Tasmania

December 2016

Statement of Ethical Conduct

The research associated with this thesis abides by the international and Australian code on human and animal experiment, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics and International Biosafety Committees of the University. Approval to conduct research in Malaysia has also been obtained from the Research Promotion and Co-Ordinance Committee, Economic Planning Unit of Prime Minister's Department Malaysia.

Jacky Chong

Declaration

I certify that this thesis contains no material which has been accepted for a degree or diploma by the University or any other institution, and duly acknowledged in this thesis, no material previously published or written by another person except where due reference is made in the text of the thesis.

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Acknowledgements

PhD was never an item in my ‘to-do list’, and until today, 10 minutes before my final submission, I am still wondering why I am doing it, and what I am going to do with it! However, putting aside the thousands of brain cells being damaged while thinking and drafting, and the dozens of wrinkles forming around my eyes while sketching and writing, PhD with University of Tasmania is nonetheless an enjoyable experience, in which, I get enlightened in varied ways and learn how to enlighten others. It is a wonderful journey, and I am grateful, to the University of Tasmania for giving me this opportunity to study, and to my very wise and patient supervisory team; Associate Prof Sharon Fraser, Associate Prof Rosemary Callingham, Dr David Moltow, and Prof Ab Saman Abd Kader, for their guidance and assistance.

I also thank my family for believing in me, and my partner for his encouragement and support, not forgetting also the ‘Tassie D’Hearty Team’ (a group of Malaysian PhDs who have returned and morn everyday about the hot weather and crazy traffics in Malaysia) for all those motivational tips and advices. My big gratitude also goes out to the Malaysian government, and the supportive respondents and institutions taking part in this study. Their enthusiasm in participating motivated me in many ways, and their contributions have added value to this study enormously.

Finally, and most importantly, my biggest thanks to my God. This study would not take place without His grace and mercy. May all glory and praise be to Him!

Jacky Chong

Glossary of Terms/Abbreviations Used

Terms	Descriptions
CA	Chief Administrator or school leader, responsible of administrative operations and management at Malaysian education institutions
CGPA	Cumulative Grade Point Average
DF	Factors discouraging progression of VET-LSEG students to higher education studies
EF	Factors encouraging progression of VET-LSEG students to higher education
EPU	Economic Planning Unit, the principal government agency responsible for the preparation of development plans for Malaysia.
FD	Financial Difficulties
GDP	Gross Domestic Product
GPA	Grade Point Average
HE	Higher Education
ICT	Information & Communications Technology
JHEOA	Department Of Orang Asli Affairs
LSEG	Low Socioeconomic Group
MARA	Majlis Amanah Rakyat (People's Trust Council), a Malaysian government agency established to guide and support Malays and other indigenous Malaysians in business and industrially growths.
MBOT	Malaysian Board of Technology'
MOE	Ministry of Education
MOE-DTVE	MOE-Division of Technical and Vocational Education
MOHE	Ministry of Higher Education
MOU	Memorandum of Understanding, agreement of collaborations between education institutions in Malaysia.
MRRD	Ministry of Rural and Regional Development

MTUN	Malaysian Technical University Network
MQA	Malaysian Qualifications Agency
ODL	Open and Distance Learning
OJT	On-Job-Training
PO	Progression Option
PTPTN	National Higher Fund Corporation, Malaysian governmental Agency established to distribute education loan to Malaysian students for higher education studies.
PTPK	Skills Development Fund Corporation, Malaysian governmental Agency established to distribute education loan to Malaysian students for vocational/skills studies.
SPM	Sijil Pelajaran Malaysia (Malaysian Certificate of Education), national examination undertaken by fifth-year secondary school students in Malaysia, equivalent to grade 12 in Australia.
SPMV	Sijil Pelajaran Malaysia Vokasional (Malaysian Certificate of Vocational Education), national examination undertaken by fifth-year secondary vocational school students in Malaysia, equivalent to skills certificate level 3 in Australia
STPM	Sijil Pelajaran Tinggi Malaysia (Malaysian Higher Certificate of Education), optional national higher examination undertaken by sixth-year secondary school students in Malaysia, equivalent to pre-university or college certificate in Australia.
VC	Vocational College
VET	Vocational Education and Training
VET-LSEG students	Vocational students with low socioeconomic background

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Abstract

Higher education (HE) has become increasingly important in Malaysia, both as tool for the country to cultivate a competitive workforce and as stepping stone for its people to gain employment as well as career advancement. However, despite constant efforts and investment aimed at encouraging student to pursue HE, graduates with *vocational education and from low socioeconomic backgrounds* (VET-LSEG) are still underrepresented in HE. The ongoing underrepresentation of VET-LSEG graduates in HE in Malaysia indicates the presence of barriers that may have prevented these students from progressing to HE. This study investigated the barriers to HE encountered by VET-LSEG students in Malaysia, and highlighted strategies designed to overcome these barriers and make HE attainable for these students.

A mixed methods, *Explanatory Design with follow-up explanations* study was conducted, incorporating questionnaires and semi-structured interviews to collect data from multi-group respondents, including vocational students from low socioeconomic backgrounds, school leaders from both vocational education and higher education institutions, and representatives from the Malaysian Ministry of Education. A case study was also conducted at a higher education institution in Malaysia, which has been offering progression pathways successfully to VET-LSEG students for HE studies.

This multi-method, multi-site and multi-respondent study concluded that VET-LSEG students in Malaysia aspired to pursue higher education study but were prevented from doing so by barriers associated with their disadvantaged background. The study identified six major factors contributing to these barriers, including financial difficulties, students' disadvantaged family background, students' low confidence, negative social influences, cultural factors and an unhelpful education system in Malaysia. The findings of this study contributed to the formulation of five strategies aimed at overcoming these barriers, included revamping the financial support system according to the needs of

VET-LSEG students, developing effective pathways and support to facilitate students' smooth transition from VET to HE, ensuring effective flow of relevant information about these pathways, establishing relevant collaboration between major stakeholders, and enhancing second chance and alternate learning pathways.

This study contributes significantly to the literature. First, it highlights the educational aspirations of VET-LSEG students in Malaysia; students who are usually perceived to have less interest in pursuing education. The high aspirations found in these students added a new dimension to the studies about the educational aspirations of Malaysian students, especially those from VET and lower socioeconomic backgrounds. Second, this study confirms the existence of educational barriers within the Malaysian education system; a system that has tried to promote fair educational access. The barriers identified in this study indicate that there are flaws in the education system which need to be addressed in order to meet the educational needs of Malaysian students. Thirdly, the six factors contributing to educational barriers for VET-LSEG students identified in this study help scope future studies focussing on barriers to higher education encountered by students in Malaysia, especially those from VET and LSEG backgrounds. Lastly, the strategies formulated from this study inform the development of new policies that target the progression needs of VET-LSEG students. These strategies also promote the close collaboration of major stakeholders, including industry, VET and HE institutions, in order to make HE in Malaysia more accessible to all students, especially those from vocational and low socioeconomic backgrounds.

Chapter 1 Introduction and Background

Background of the Study

Malaysia was named one of the 29 countries in the world with highest economic growth in the Global Economic Prospects report 2012 (The World Bank, 2012b) and it has harvested significant success from its economic development over the years. Its improving economic performance can be observed through the constant growth of Gross Domestic Product (GDP) from USD2.4 billion in 1961 to USD278.7 billion in 2011 (Trading Economics, 2012), the depleting incidence of poverty from 49.3% in 1970 to 3.8% in 2009 and the decreasing of unemployment rate from 7.4 in 1970 to 3% in 2012 (Economic Planning Unit, 1965, 1991). Its ranking 21st in The Global Competitiveness Report 2011-2012, and 18th in The World Bank's Doing Business Report 2012, ahead of countries like the South Korea, Germany, Japan and Taiwan, shows the country's great potential in realising its vision of being a fully developed country by year 2020 (The World Bank, 2012a; World Economic Forum, 2011). Participating in these economic developments has not only brought economic success to the country but has also provided it with economic challenges.

Under the new economic landscape, Malaysia faces challenges posed both internally by their new development targets, and externally as a result of the global economic recession, the dynamic business environment, depleting resources and increasing quality standards. These challenges have not only made it tougher for the country to excel, but have also made the environment harder for its people, especially in terms of coping with the increasingly complicated work procedures that require more sophisticated skills. Within the new economic environment, those who form the majority of the workforce in the country need to be equipped with higher knowledge and more sophisticated skills in order to stay competitive and successful (Performance Management and Delivery Unit, 2010).

Skilled workforce

The need for a highly qualified workforce has been highlighted since the Eighth Malaysia Plan, as the country started to establish its vision to pursue fully developed status, built on a knowledge-based economy (Economic Planning Unit, 2001). According to Wee (2001), a workforce with tertiary qualifications is deemed important in driving the knowledge-based economy. The lack of a tertiary qualified workforce reported in the Eighth Malaysia Plan, raised the pressing need to cultivate a workforce that was more highly educated and had better skills (Wee, 2001).

The lack of a highly qualified workforce in Malaysia is not the only indicator of the need to improve its workforce; the change in the external environment has also highlighted important reasons for the country to review the competency of its workforce. As the economic environment has evolved, competition caused by economic liberalization and globalization has intensified, and this combined with scientific developments and the increasing adoption of new technologies has complicated the job market, highlighting the fact that a higher level of education is a necessity if the local workforce is to survive and remain competitive (Abdul Rahman, 2011).

In addition, the country's recent economic blueprint 2013-2025, which emphasises productivity-led and innovation-led growth, has resulted in the establishment of new economic sectors, including solar photovoltaic manufacturing, biotechnology industries and various business and utility service industries. This diversification and continuous development of the economy contributes to the country's demand for more highly educated and a more sophisticated and skilled workforce (Hashim, 2007). Such need is also highlighted in both Malaysia's Second Outline Perspective Plan and the most recent 2012 annual report of the Economic Transformation Programme. These documents emphasize the need for higher qualifications in both knowledge and skills, as the developments in both global and domestic economies can no longer be resourced by a workforce with low levels of education and mere hard labour (Economic Planning Unit, 1991, 2012). Thus, the current workforce needs to be up-skilled, while those who are still in schools need to obtain a higher level of education and better training in order to keep up with the challenges brought forth by the new environment.

The urgency of the need for up-skilling has been communicated to the country's education institutions and to the entire nation, and has been highlighted as an essential goal which will benefit the country as a whole (Hee, 1994; Kementerian Pengajian Tinggi, 2010; Ministry of Higher Education, 2010). Various strategies and policies have been implemented to cultivate a more highly qualified workforce in Malaysia. The major strategies include establishing more HE institutions resulting in wider access to HE (Ministry of Higher Education, 2007); awarding financial assistance to encourage wider access from across society; providing alternative education modes; and the nationwide promotion of HE and training.

Establishing more HE and training institutions

The HE and training system is recognised in Malaysia as playing a vital role in producing a highly qualified workforce. The government has invested continuous efforts and resources in maintaining a comprehensive system that facilitates effective education and training. From the creation of its first university, the University Malaya in 1906, the education system in 2016 consists of over 1000 certified HE institutions and technical and vocational institutions, both public and private, listed with the Ministry of Higher Education and the Ministry of Human Resources (see Table 1). Strategies used to achieve this state have included the upgrading of existing institutions to higher learning institutions offering higher levels of education and conferring higher level qualifications. The most recent strategy has been to upgrade secondary vocational schools to vocational colleges and to upgrade private colleges to private universities, for example, the Taylors College and SEGi College are now Taylors University and SEGi University respectively (ICEF-Monitor, 2012).

Table 1.1 *Number of HE and Training Institution as at year 2013*

Types of Institution	Quantity
Public higher education institution	20
Private higher education institution	434
Technical college	32
Public funded vocational and community college	88
Other accredited public and private skills training centres	594

Note: (Source: Ministry of Higher Education and Ministry of Human Resources)

Awarding financial aids to students

The government recognises that financial difficulty is another main hindrance stopping people from pursuing HE, thus various funding bodies and corporations have been established to provide scholarships and education loans for students who wish to proceed to HE. Among all the funding corporations, the government funded National Higher Education Fund Corporation (PTPTN) and Skills Development Fund Corporation (PTPK) are the largest and support the greatest number of students pursuing HE and training in the country. According to the Economic Transformation Programme Annual Report 2012, the PTPTN disburses RM3 billion (approximately AUD1 billion) annually which supports approximately 200,000 students pursuing various level tertiary education, whilst the PTPK disburses an average of RM200 million (approximately AUD67 million) every year helping domestics students pursue various levels of technical and vocational training (Economic Planning Unit, 2012).

Providing alternative learning modes

While building more institutions, different learning modes have also been formalised to provide more learning flexibility to encourage wider access from the public, especially those who experience difficulty attending regular classes. Most recently, the Open and Distance Learning (ODL) system has been made available through a few government-selected HE institutions, including the Open University Malaysia and University of Tun Razak. The ODL system allows university programmes to be offered through alternate channels, for example making use of Information &

Communications Technology (ICT) in providing teaching and learning supports and utilising interactive study materials (Sherron & Boettcher, 1997). This allows wider access to HE for people who have difficulty attending class in a traditional setting, especially working adults who need further education for career change or advancement, as well as those from remote and rural areas (Hong & Songan, 2011; Ministry of Higher Education, 2011a).

In addition to the strategies mentioned above, education campaigns, road-shows and skills competitions have also been conducted regularly by government and HE institutions in order to create wider awareness about the importance of, and opportunities for, HE in the country so that more Malaysians are motivated and supported to attain HE qualifications (Performance Management and Delivery Unit, 2010).

Achievement of HE system

The Malaysian government's efforts have not been wasted as indicated by the increase in HE enrolment from around 3000 in 1965 to approximate 1.3 million in 2010 (Economic Planning Unit, 1965, 2006a). Table 1.2 illustrates the breakdown of student enrolment into HE over the years 1965 to 2010.

Table 1.2 *Number of Enrolment*

Year/Enrolment	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010
Tertiary Education	3000	13324	31529	36800	69700	100590	153610	321729	731698	1326340

Note: (source: Malaysia Plans)

The number of new Student enrolments in various levels and various disciplines of tertiary studies, reached approximately 262,626 in 2002 and has shown a continuous climb to 390,535 students in 2010. Table 1.3 provides a breakdown of new students entering each level of HE; the figures show an increase in student numbers not only at Bachelor degree level but also at Postgraduate level of studies (Ministry of Higher Education, 2010, 2011c).

Table 1.3 *Number of Fresh Student Entrance*

Year/Entrance	2002	2003	2004	2005	2006	2007	2008	2009	2010
Phd	885	1146	2783	2050	2286	3429	3947	4942	5669
Master	11028	10882	16270	9794	12998	14293	19082	23922	24557
Bachelor	64360	82411	86598	86193	101794	120249	118388	132040	137616
Others	186353	182746	192722	151060	179158	220082	240959	220432	222693
Total	262626	277185	298373	249097	296236	358053	382376	381336	390535

Note: (Source: MOHE- Perangkaan Pengajian Tinggi Malaysia & Graduates Tracer Study 2011)

The National Graduates Employability Blueprint reported that the country's HE system produces 180,000 graduates annually (Ministry of Higher Education, 2012). With increasing student admission (see Table 1.2), however, it is likely that the annual number of graduates will also increase. Not only does HE data indicate increasing number of enrolments and graduates, the country's technical and vocational skills training institutes have also reported similarly increasing numbers. Technical and vocational skills training graduates have risen from approximately 50,000 in the 1990s to 90,580 graduates in 2011, with the Advanced Diploma being the highest certification awarded. This qualification is a potential feeder to student numbers in the HE system. Such pathways will further increase both the number of new enrolments as well as the number of graduates in HE in future (Department of Skills Development, 2011b).

The numbers of people in the workforce with HE and higher skills have also increased, while graduates with HE qualifications have achieved higher levels and more sophisticated jobs. Statistical reports produced by the Department of Statistics Malaysia (including 'Statistics of Graduates in the Labour Force'; 'Labour Force Survey') provide evidence of this success. The number of 'employed graduates by highest certificate' that have progressed into higher level jobs, mainly in the professional, technical and management field, have increased from 228,100 in 1982 to 2,030,600 in 2010 (Department of Statistics Malaysia, 2011a, 2011b) which is a significant advance.

While successes in the education system have been reported, flaws in the performance of the system have also been observed in the past, as suggested by Arshad and Shamsudin (1997), "the government policy has to some extent achieved the intended result but poverty and inequality within and between sectors are still significant and

apparent” (p. 1). As these authors suggested, though encouraging results have been reported in terms of student enrolment and graduate employment, the strategies that have been implemented have not benefitted every individual in the country as intended. Those from the low social economic group (LSEG) have remained disadvantaged and seriously underrepresented in HE.

The LSEG in Malaysia

In Malaysia, there is no clear categorization and description defining LSEG. The statistics and available literature, however, suggested that the LSEG in Malaysia were those within the bottom 20% income group that earned a monthly household income less than RM2500 (approx. USD582), which was less than half of the national average household income at RM6141 (approx. USD1431) per month as at 2014 (Department of Statistics Malaysia, 2012; Economic Planning Unit, 2013a, 2013b, 2015b). According to Khazanah Research Institute, these LSEGs were usually the households living along the poverty line that struggled to afford living necessities such as basic food and shelter.

The World Bank (2010) found that, most of the LSEGs, especially those from the poorer households, resided in Borneo and the Eastern Peninsula of Malaysia. Among all states in Malaysia, Sabah was named the poorest state which housed close to 40% of the poor households of the country, followed by Terengganu which reported to have the highest number of families categorised as extremely poor (Hassan, 2011; Pi, 2011). Though the incidence of poverty has been reported higher in the rural areas in Malaysia over the years, the rapid urbanisation and the increasing migration of poorer households from rural areas to urban areas have inevitably increased concerns about the possible growth of urban poverty rates in the country, especially in big cities such as Kuala Lumpur and Petaling Jaya (Chamhuri & Yusof, 1997; Siwar, Ahmed, Bashawir, & Mia, 2016).

Other than the low household income, the education attainment of these LSEGs was relatively low compared to Malaysians from higher socioeconomic groups. According to Majid, Jaffar, Man, Vaziri and Sulemana (2016), more than 50% of the heads of these LSEG households, especially those from the rural areas, barely finished

primary school education, and only a small number of these household heads completed high school with a proper Malaysian Certificate of Education qualification. Although the recent statistics and studies showed an improvement in the LSEGs' completion rates in high school education, their participation in HE was still low. According to another study conducted by Abdullah, Mamat, Zal and Ibrahim (2013), only 880 LSEG students managed to graduate with a HE qualification between the years 1971 to 2010, and this amount is less than 1% of the 180,000 reported to have graduated through the HE system every year.

The underrepresentation of LSEG in HE

The underrepresentation of LSEG in HE is not a problem that is unique to Malaysia. In fact, developed countries such as Australia, United States of America (USA), United Kingdom (UK) and even some European countries, who have a longer history of educational development, reported it as a long-term issue, which demands attention and solution.

Participation of LSEG in HE in other countries

Various studies have claimed underrepresentation of LSEG in HE. The European Commission (2010) highlighted that LSEG was still underrepresented in HE despite the highly developed system and free HE provided in some European countries. Cuthill and Schmidt (2011) confirmed the outcomes of the Review of Australian Higher Education (2008), which reported that the participation rate from low socioeconomic groups in Australia was persistently and significantly lower than those from higher socioeconomic groups (Bradley, Noonan, Nugent, & Scales, 2008; Cuthill & Schmidt, 2011). In the UK, the number of LSEG in HE is persistently low despite the country's increasing number of universities (Boliver, 2011). While Allen, Solomon, Storan// and Thomas (2005) and Chenard (2010) both reported low participation of LSEG in HE in the USA and Canada respectively.

Participation of LSEG in HE in Malaysia

In Malaysia, the underrepresentation of the LSEG in HE is not new. The issue has been present since the first Malaysia Plan in 1965 where HE was reported as special privilege, available only to an elite group from the urban areas who could afford to pay for it (Economic Planning Unit, 1965). This disparity in education has improved significantly since that time as the government recognised the importance of educational equity and undertook serious measures to make HE more accessible to the nation at large, including establishing more HE institutions and providing various forms of financial assistance (Mohamed & Said, 2012). While the LSEG is underrepresented in HE in Malaysia, many LSEG students also drop out of the education system before even managing to complete their secondary school education (Anand, 1983; Shariffuddin et al., 2014; Suruhanjaya Hak Asasi Manusia Malaysia, 2010).

The general education path of LSEG students in Malaysia

HE has not commonly been included in the education pathway of LSEG students (Anand, 1983; Shariffuddin et al., 2014; Zainal, Kamaruddin, & Nathan, 2009), and the educational choices these young people make can be either voluntary or involuntary. Abdullah et al. (2013) suggested that most Malaysian students from LSEG backgrounds only receive formal education up to the primary school level. The study reviewed data about students' progression from 2005 to 2010 and found that most LSEG students drop out during the transition from primary to lower secondary school. They also found that not many LSEG students survive the five years of formal secondary education, and rarely do these students progress successfully to tertiary education. In an earlier study, Kamarulzaman and Jusoh (2008) assessed the statistics produced by Department Of Orang Asli Affairs (JHEOA) and found that only six out of every hundred LSEG children who entered Primary 1 (Grade 1 in Australian Education system) progressed to Secondary School Level Five (Grade 11 in Australian school system) .

The fact that Primary education in Malaysia is compulsory and free plays a major role in keeping the students in school. According to the Education Act 550, all parents that fail to send children to school for primary education stand the risk of being

punished, either with a fine not exceeding RM5000 (approximate AUD1300) or imprisonment not exceeding 6 months. The stipulated punishments are strong enough to instil fear and encourage LSEG parents to ensure their children complete the compulsory education at primary level. Such influence diminishes as the student reaches the secondary school because although this level of education is still free, it is no longer compulsory and as a result most students do not continue.

The fact that most LSEG students choose to leave once education becomes optional implies that LSEG parents and/or students view education as somewhat irrelevant to their lives. If the importance of primary and secondary education is not evident to them, then it is perhaps even harder for them to see the relevance of HE. A study by James (2002) found that LSEG students are less likely to see HE as rewarding compared with those from higher socioeconomic groups, but instead are generally more interested in leaving school to go to work in order to bring food to the table. According to Abdullah et al. (2013), only approximately 2% of Malaysian LSEG students in every cohort manage to advance and complete HE at tertiary level. As a result, due to lack of proper education and qualifications, LSEG students who leave school early usually do not find decent employment. The job opportunities available to these students have been found to vary according to the parents' occupation and the area that they live in (Abdullah et al., 2013; Shariffuddin et al., 2014).

The LSEG living in rural or kampong areas are referred as 'Rural Poor' while the LSEG in city areas or busier suburbs are referred as 'Urban Poor'. Most LSEG workers were found to be involved in manual labour work as a factory worker, hawker, stall helper or grocery shopkeeper. Those who live in rural areas also worked in rubber or palm oil estates near to their residential areas. These jobs provide LSEG students with comparatively stable work which can be obtained without proper education qualifications (Anand, 1983). Despite the availability of these manual labour jobs, however, LSEG still experience difficulties in getting employment. This is particularly the case for those young school dropouts below the age of 16, due to regulations (Employment Act 1955) that restrict the working conditions and hours of the under-aged

workforce. Such restrictions usually create extra trouble and burden for employers thereby discouraging them from hiring these young LSEG school leavers.

For LSEG living in rural areas, businesses and economic activities are reduced, resulting in more limited job opportunities. As a result, LSEG students who leave school without completing their education either stay unemployed or have to settle for any work that is available to them. Many of these young LSEG school leavers, therefore, follow the occupation of their parents, working in agricultural activities, such as fishing, farming and farm labouring. Such occupations are unstable, relying on seasonally dependent income which according to Masron, Yaakub, and Masami (2013) might just be sufficient to feed the family.

Those LSEG children who remain unemployed depend on their parents or other family members for financial support. These unemployed youths have been observed to wander around the villages or on the streets and face risks of being lured into unhealthy activities or even drug addiction (Tamuri, Mahmud, & Bari, 2005). It is also worth noting that LSEG people in Malaysia marry early, some as early as 16 years old, and usually have bigger families (around four to five children) than people from other social groups (Elm & Hirschman, 1979; Peng, 2002). For LSEG students who drop out of school early, an early marriage resulting in extra family members becomes an added responsibility discouraging them from going back to school to complete the necessary education or to leave the village for employment opportunities (Abdullah et al., 2013; The World Bank, 2012d).

The government has recognised the necessity of keeping these young students in school and various strategies have been implemented over the years to address this issue (Economic Planning Unit, 2010a, 2010c; Ministry of Education, 2014b). Access to education has been made easier through the building of more schools and hostels especially in rural areas, as well as government-provided special education programmes. One such programme, the KEMAS' early childhood education programme, builds the foundation for effective learning in the future, while the comprehensive Special Model School programme, targets LSEG children with special learning needs. To ensure the LSEG parents understand the importance of education, the Literacy Education

Programme and Education for the Wellbeing Family Programme have been developed to improve literacy among the LSEG adults, and to instil positive values about education.

Recognising that LSEG children might be uncomfortable with the traditional classroom setting and academic teaching, the government has also provided alternate education programmes, the most common of which is vocational education and skills training (Kamaruddin & Jusoh, 2008). With these strategies, the government has improved the retention of LSEG students with a significant reduction in attrition rate among primary and secondary students evident in the Annual reports of JHEOA and Ministry of Education (Kamaruddin & Jusoh, 2008). The provision of vocational education and training (VET) in Malaysia has been reported as the more preferred educational choice of LSEG students (Suradin, Salehuddin, Mustafa, Abd-Razzaq, Madar, & Ab-Hadi, 2010; Abdullah et al., 2013), a fact confirmed in studies undertaken in other countries (James, 2002; Schindler & Reimer, 2011).

LSEG student and vocational education and training

The government's decision to use VET as a strategy to keep LSEG students in school is research based. The literature indicates that VET is generally a more preferred education choice among LSEG students, for example, James (2002) found that Australian LSEG students generally believe that VET is more relevant to their needs, especially in acquiring employment and building future careers. Such findings have been confirmed in studies conducted throughout the world, including Germany (Schindler & Reimer, 2011), the UK (Bowers-Brown, 2006), and the USA (Allen et al., 2005).

Various factors have been identified as contributing to VET as a more preferred choice among LSEG students. James (2002) listed four underlying factors including the differing stringency of entry requirements, the difference in cost of study, the shorter term of study, and the suitability of VET to their career intentions. These factors have been confirmed in other studies such as Allen et al. (2005), Bowers-Brown (2006), Schindler and Reimer (2011), and the Centre for the Studies of Higher Education (2008). Many similar factors have been identified in studies conducted in Malaysia, such as Nor, Roslan, Mohamed, Hassan, Ali, and Manaf (2011), Nicholas (2006), and Tamuri,

Mahmud, and Bari (2005). In this regard, Nor et al. (2011) and Tamuri (2005) blamed the high school dropout rate on the low academic achievement of LSEG students, while Nicholas (2006) associated the low academic achievement to the learning environment and the school system that has failed to capture the interest of LSEG students.

According to Nicholas (2006), conventional schools follow a fixed syllabus and emphasize a rigid curriculum which conflicts with the culture and learning style of LSEG students, discouraging them from studying effectively and enthusiastically. Nicholas argued that LSEG students prefer a more flexible learning environment, a finding confirmed by Abdullah et al. (2013) who noted that LSEG students require diverse learning methods to create a learning environment more conducive to their interests. From this perspective as VET focuses on acquiring skills and practical training, it seems more appropriate to the learning needs/preferences of the LSEG students (Nicholas, 2006).

The financial issues that LSEG students experience are alleviated somewhat by the fact that VET at school level is provided free and is complimented by free accommodation and meals in public VET institutions. Even in private or semi-private institutions where fees are charged and accommodation is not free, financial assistance is provided in the form of education loans and living allowances. Free accommodation has the added advantage of enabling the institutions to monitor truancy and reduce or eliminate dropout cases. The free accommodation and living allowance provided in conjunction with VET has to a certain extent made VET a better alternative to conventional academic education for LSEG students, especially those living with extreme poverty.

Thus, VET seems to have tackled the major factors causing LSEG students to drop out of schools through the provision of:

- Free education which covers living expenses, including food and accommodation;
- Practical education which emphasises skills training and flexible learning;
- Targeted education which focuses on preparing students for employment;
- and

- Shorter terms of study which allows students to obtain certification and become workplace ready earlier.

As a result VET should both reduce the number of LSEG students leaving the education system without proper education, and enable them to develop the required knowledge, skills and certifications which enable them to acquire work and a reasonable salary that improves their life. Available statistics and the research literature has suggested otherwise (The World Bank, 2012d), however, and the problems that they highlight are presented in the following section.

What has gone wrong?

The VET system

VET forms an integral part of the education system in Malaysia offering training programmes that equip students with the basic skills and knowledge to work in their field. In Malaysia VET was first recorded in the 1800s, when informal training was offered to village boys to equip them with relevant skills to work as mechanics on the railways. The system continued to expand with the establishment of its first training school in 1902, the Malayan Art School, to the comprehensive VET system of 2016 with 993 accredited public and private training institutions scattered around the country offering as many as 4,798 training programmes in various fields ranging from certificate level to advanced diploma (Department of Skills Development, 2011b; Pang, 2010).

Over the years, VET has increased in popularity, especially among LSEG from both rural and urban areas. A close estimation based on the certification production statistics provided by Department of Skills Development (DSD) shows that the system has sustained an upward trend in its student enrolment since 1990, and has managed to maintain its enrolment at approximately 80,000 students per year since 2001. In Malaysia students have access to a number of routes to enrolment into the VET system. Weak performers under the conventional academic educational system are usually introduced to and streamed into the public vocational school system, while those who have already dropped out are given a second chance to re-enter into the education

system by enrolling into vocational institutions run privately or semi-privately, like the Institute Kemahiran MARA or The Otomotive College.

VET graduates

The completion rate of vocational students is generally high, usually above 90% (Further Education Funding Council, 1998). Over the years positive results have also been reported in the annual report produced by the Department of Skill Development, with VET graduates increasing from 500 in 1990s to 123,022 in 2010. With the continuing efforts of the government and VET institutions in encouraging and promoting VET, VET enrolments and graduations are predicted to continue to increase to at least 100,000 annually over the next 5 years (Department of Skills Development, 2011a). Although the upward trend of VET enrolments and completions look promising for the development of the VET system in Malaysia, VET graduate tracer studies indicate otherwise.

According to the statistics and annual Graduate Tracer Studies (2008 to 2013) conducted by the Malaysian Department of Skills Development, VET graduates are usually 17 years or older at the time of graduation, and more than 95% graduate with only Certificate level qualifications. The remaining 5% graduate with either a Diploma or an Advanced Diploma qualification. It is worth noting here that the Advanced Diploma is the highest level vocational qualification offered through the current VET system in Malaysia. These statistics also suggest that most LSEG students graduate only with skills certificates, and very few actually manage to leave school with a diploma, while none actually reach the HE level of studies such as the bachelor degree or higher.

After school progression of VET students

There is no guarantee that after graduation VET graduates will get a job; an outcome that is promoted by most VET institutions. The recent statistics in the annual Graduates Tracer Study indicate (2008 to 2013) indicated that on average of only 60% of graduates were recruited to work immediately after graduation, while the remaining 40% remained unemployed. Among those recruited, less than 10% were hired into a

professional or advanced skills position, earning a monthly salary ranging from RM1,500 (AUD500) to RM3,000 (AUD1000). Ninety percent, therefore, were mainly recruited into basic skills and junior level positions, earning not more than RM1,000 per month (see Figure 1.1). It is also worth noting that only 40% of those recruited, were offered permanent and full time employment, while the remaining were recruited either on contractual or part time basis (Attorney General's Chambers Malaysia, 2012; Department of Skills Development, 2011a; Economic Planning Unit, 2012b; Ministry of Higher Education, 2011b; 2011c).

The reported average salary of VET graduates is close to the minimum wage of RM900 per month and far from the per capital income (PCI) of RM2,181 reported by the Economic Planning Unit (EPU) in Malaysian Quality of Life report 2012. This means that the average RM1000 monthly income places these VET graduates at the bottom of the income groups according to the Findings of the Household Income Survey 2012, hence they are grouped as part of the Malaysian LSEG.

(Source: MoHE Graduates Tracer Study)

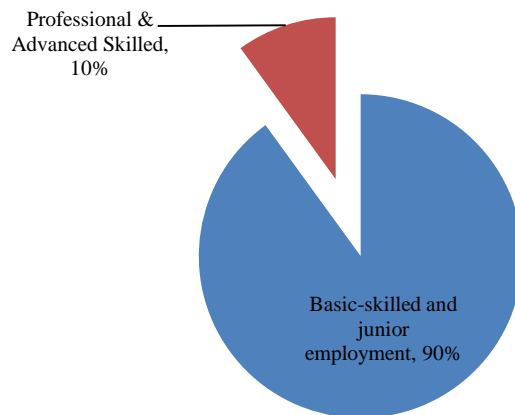


Figure 1.1 Occupation of VET Graduates

The concerns

The low entry salary raises concerns about the acceptability of the VET graduates in the job market. The low level job positions and less permanent employment

conditions raises a more serious concern about the future development of VET graduates, especially in terms of their career prospects and income security. If the current job market in Malaysia is as stringent as has been claimed (Abdul Rahman, 2011), in which a university bachelor degree is the minimum qualification necessary for decent employment, then the certificate and diploma level qualifications of VET graduates may put them in a disadvantaged and less competitive position.

With the limited job opportunities caused by the prolonged economic recession, the increasing number of university graduates produced in the country every year (see Table 1.3), as well as the challenges imposed by the continuously advancing technology developments, the VET graduates could be looking at an increasingly difficult future. Graduates may find that not only do they not progress to a successful career but they may not even secure stable employment after completing their studies (Abdul Rahman, 2011).

What can be done?

Lack of qualifications is the primary reason that VET graduates are in a disadvantaged position in the work market, especially those in the trade and technical field of work (Abdullah & Mustapha, 2001; James et al., 2008; Nor et al., 2011). In order to improve their competitiveness, VET graduates need to upgrade their qualifications with higher level education and training. Through suitable higher level education and training programmes, the VET graduates can obtain a higher qualification (Abdul-Karim & Ahmad, 2012; Rosman & Hamzah, 2012), supplying them with more bargaining power and better opportunity to demand better employment and a higher salary. With higher qualifications, VET graduates also stand a better chance for career advancement and subsequently to improve their lives (Abdullah, 2012). The literature has suggested, therefore, that VET graduates would benefit from having HE, at bachelor degree level, due to the following factors:

- The existing VET qualification is not sufficient in securing proper employment and decent salary for VET graduates (Abdul Rahman, 2011; Abdullah, 2012; Olausson, 2010);

- The existing VET qualification, including VET certificate and vocational diploma, is not sufficient to help VET graduates to progress in their careers (Abdul-Karim & Ahmad, 2012; The World Bank, 2012d).
- The work market demands for HE and more advanced skilled workforce (Abdul-Karim & Ahmad, 2012; Roksa, 2011).
- HE is the easier way for VET graduates to improve their competence and employability value (Abdul-Karim & Ahmad, 2012; Lopez, Thomas, & Wang, 1999; Poo, Ismail, Othman, & Sulaiman, 2012).

The problem

The government has recognized the importance of HE and over time various policies have been implemented to create awareness as well as to persuade its people to pursue HE (Economic Planning Unit, 2010c, 2012). Despite relentless encouragement and various subsidies provided by the government, however, the VET graduates are still severely underrepresented in HE. In fact, according to the statistics provided by Graduate Tracer Study, less than 10% of VET graduates are selected each year to continue for higher level education (Ministry of Higher Education, 2011b).

What is stopping them?

A report by the European Commission (2010) indicates that: “Students from lower socio-economic status backgrounds are statistically more likely to 'opt for' a vocational training route, from where it is more difficult to continue to higher education” (p. 29). While the report did not explain in any depth why it was difficult for LSEG students who opted for the VET route to progress for HE, it indicated that studying VET is an important contributing factor to their lack of progress into HE, especially those from LSEG.

Studies undertaken by James (2002), Schindler and Reimer (2011) and Wheelehan (2010) in countries such as Australia and Germany, have also suggested that VET graduates face issues in progressing to HE due to their skills and VET education background. Similar studies, however, have not been undertaken in Malaysia, and hence the barriers to '*VET students from a LSEG background*' (VET-LSEG students) progressing to HE remain unexplored. The purposes of this study, therefore, is to investigate the barriers to progression to HE for VET-LSEG students in Malaysia, and to suggest solutions to diminish or eliminate any barriers in order to make HE more accessible to them.

Statement of problem

Statement 1

HE has becoming increasingly important in Malaysia, not only is it important for the country to cultivate a competitive workforce, it is also important for the people to gain employment and career advancement. Over the years, various efforts have been made to ensure Malaysian people are able to attain HE qualifications but despite these efforts, VET-LSEG graduates remain underrepresented in HE.

Statement 2

As has been identified in past studies, the underrepresentation of VET-LSEG students in HE could have been caused by various factors, including their low aspirations, financial hardships and/or flaws in the country's education system.

Statement 3

The barriers to HE in Malaysia must be identified and overcome in order to ensure VET-LSEG students are not impeded from progressing to HE. This outcome becomes increasingly important as Malaysia can expect more VET graduates in the years to come, due to educational policies which stream increasing numbers into vocational studies. Eliminating the barriers will not only make HE more attainable to these LSEG graduates, it will also contribute to developing a better-qualified labour force with more

sophisticated skills. Both outcomes will promote social and economic advancement in the country.

The aim of this study

The main objectives of this study are to examine the barriers encountered by VET-LSEG students to HE in Malaysia, and to make recommendations aimed at overcoming these barriers in order to make HE more accessible to them. Specifically, the study will:

- Explore the Malaysian VET system with a specific focus on the trade programmes, and the HE system to identify possible barriers preventing the progression of VET-LSEG students;
- Investigate contextual factors, including major stakeholders, contributing to barriers encountered by VET-LSEG students; and
- Conclude with recommendations to overcoming the barriers in order to make HE more accessible to VET-LSEG students.

It is important to note that the study focuses the investigation on the trade programmes in VET because these are the major programmes offered to young students progressing directly through public funded secondary schools, through government-funded institutions (Economic Planning Unit, 2006b, 2010c; Ministry of Education, 2011). It is also important to note that it is not the intention of this study to argue that all VET students in Malaysia are from the LSEG, rather it is argued that VET-LSEG students are more prone to be streamed into VET studies due to their disadvantaged background, which contributes to their difficulty in progressing to HE. Thus, the focus of this study is the VET-LSEG students and the study outcomes will contribute to improving their opportunity to attaining HE qualifications.

The research questions

In acknowledging that VET-LSEG students in Malaysia face potential barriers to HE, this study searches for answers to the following research questions:

1. How do the barriers to HE affect VET-LSEG students in Malaysia?

2. What are the major contributing factors to the barriers encountered by the VET-LSEG students in Malaysia?
3. How can the barriers to progression be overcome so that HE is more accessible to VET-LSEG students?
4. Who are the main stakeholders and what are their roles in contributing to the success of overcoming the barriers for VET-LSEG students?

The significance of study:

This study contributes to the provision of an education system in Malaysia premised on equity and equal opportunity to students from disadvantaged backgrounds. This is especially important to VET-LSEG students who are currently underrepresented in HE. The study will also contribute to the country achieving inclusive growth through improving LSEG's representation in HE, which contributes to inclusive social and economic growth. Specifically this study will help relevant stakeholders, including VET institutions and higher learning institutions, the government, relevant authorities such as Human Resources Development Department, the Ministry of Education to:

- Identify and understand how the education and training system contributes to the barriers that VET-LSEG students experience in pursuing HE;
- Develop strategies that will contribute to addressing these barriers;
- Assist policy makers to revise existing policies and to refine future development and transformation strategies for the education and training system in the country;
- Create a more conducive environment for existing and future students to pursuing HE in Malaysia;
- Identify an effective educational route for people from disadvantaged backgrounds to achieve HE outcomes.

Thus, the ultimate goal of this study is to improve the current education system in Malaysia and to ensure the system provides equal opportunity for every individual to realise his or her highest potential.

Research Methodology

Research Approach

A Descriptive Exploratory (DE) approach is adopted to enable a wide exploration on the topic of this study. The DE approach was deliberately selected due to the scant resources and limited number of studies previously conducted in the area of interest. The DE approach, as suggested Lambert & Lambert (2012), enables this study to break new research ground on the subject under study and to seek a preliminary understanding about the issue, which in this research is in defining the barriers to HE among the VET-LSEG students and the factors contributing to such barriers. Such preliminary understanding, as concurred, presents the raw picture of the issue which is useful in determining the nature of the issue and if needed, generate potential hypotheses (Sousal, Driessnackll, & Mendes, 2007) for further exploration and subsequent studies in future.

In order to facilitate an effective DE study, an “Explanatory Sequential Design” advocated in Creswell (2012) will be used. This is a mixed methods design, using Questionnaires, Semi-Structured Interviews and Case-Study to allow for a deeper and more thorough exploration of the proposed subject. . Data that are generated will be examined in order to discover themes, identify patterns and evaluate irregularities contributing to an understanding of context and constructing theories about the research subject (Berglund et al., 2006). As the main objective of the study is to examine the current education system, stakeholders who are directly involved in the operation of relevant systems will be purposively selected to participate in this study.

The data collected through Questionnaires and Semi-Structured interviews will be triangulated with case study data from a local higher learning institution, which offers progression pathways for VET-LSEG into higher level education studies. The multi-methods, multi-participants and multi-site design enables the research subject to be studied more thoroughly from different perspectives, and also to generate more reliable and potentially generalizable outcomes (Creswell, 2003).

Outline of the Study

This study consists of seven chapters. The rationale and significance of this study was presented above in this chapter, with details of the research questions and an overview of the research methodology. Chapter 2 presents the literature review, while the research methodology is presented in Chapter 3. The first phase of data analysis and findings, which involves the questionnaires and interview data, is presented in Chapter 4, while the second phase of data analysis and findings, which involves data collected through case study, is presented in Chapter 5. The research questions are addressed in Chapter 6, with summary of findings and suggestions to overcome the barriers identified in Chapter 4 and Chapter 5. This study concludes with Chapter 7, which describes the overall findings of the study, limitations of the study and suggestions for future studies.

Chapter 2 Literature Review

This chapter presents the literature review for this study. Given the limited literature available with a specific focus on ‘barriers to HE encountered by VET-LSEG students in Malaysia’, the literature selected for the review in this study has also included literature with a wider focus, such as general barriers to education encountered by LSEG students, general barriers to HE encountered by VET students, and barriers to HE encountered by LSEG students in Malaysia. In this regard, studies which focussed both on Malaysian students and students from other countries were reviewed.

The literature reviewed is presented in four sections. Section one describes the general barriers to HE encountered by the LSEG students. Section two explores the barriers to HE encountered specifically by LSEG students in Malaysia who have opted to study VET. Section three assesses the major factors contributing to the barriers and possible strategies to diminish or eliminate the barriers encountered by LSEG students in general. While Section four compares these strategies and identifies those found to be effective in diminishing or eliminating barriers encountered by VET-LSEG students in Malaysia. This section four also identifies the major stakeholders and their roles in VET and HE.

Barriers to Education

Barriers to education is a problem broadly observed, not only in underdeveloped countries but also in those developed countries with established education systems. The barriers to education are caused by different contributing factors resulting in different levels of impact to the affected people. According to past studies, the two biggest factors resulting in non-attendance at school, especially for children aged five to thirteen, are conflicts and chronic poverty (Coley & Baker, 2013; Education for All (EFA), 2015). The effect of these factors has been found to be extensive and a blockage for the affected people, regardless of gender and social differences, and levels of education. According to past studies, those affected are usually victims of the political and economic situation of the country (Education for All (EFA) Global Monitoring Report team, 2011; Shah,

2013; Vanderslice, 2014). These factors are destructive as they either paralyse the system making it impossible to offer education, or life-affecting issues divert people's attention making education either inferior or too luxurious to attain (Berg, 2002, 2008; UNESCO Institute for Statistics (UIS), 2015; UNICEF, 2014).

Malaysians are not, however, subjected to barriers caused by the extreme political conflicts or chronic poverty. This is evidenced by Malaysia's outstanding educational development with its well-developed education system which has resulted in a high national literacy rate of 94.6% for the total population and almost 100% for children age between five and 13 (Indexmundi, 2016), its promising economic achievements, with its constant growth of Gross Domestic Product (GDP) from USD2.4 billion in 1961 to USD296.22 billion in 2015 (Trading Economics, 2012, 2016), and the decreasing incidence of poverty from 49.3% in 1970 to 0.6% in 2014 (Asian Development Bank, 2016; Economic Planning Unit, 1965, 1991). Over the years, various measures have been put in place, including free basic education from pre-school to pre-tertiary levels and sponsored HE at publicly funded HE institutions, as well as financial aid to ensure education is accessible to all Malaysians regardless of gender, racial and socioeconomic status (UNESCO, 2015).

Despite free basic education and efforts spent in making education widely accessible, Malaysians experience barriers to education. The factors contributing to these barriers are associated more closely with people's backgrounds and both the education and social systems in the country. Statistics indicating high attrition rates at upper secondary and low participation rates in post-secondary education, and HE (Ministry of Education, 2014b; UNESCO Institute for Statistics, 2014), indicate that barriers are more significant at the higher levels of education in Malaysia, and that these barriers are experienced more by VET students from LSEG background who are the group of students that are the focus of this study.

Barriers to HE

Two schools of thought are relevant to understanding the barriers encountered by VET-LSEG students. On one hand, studies such as James (2002) and Long (2014) have claimed that the people most affected by barriers to HE are those from the LSEG mainly due to their disadvantaged backgrounds, including lack of finance, family discouragements and lack of interest. On the other hand, Buchanan et al. (2009) and The World Bank (2012) found that students with skills or VET backgrounds were usually not provided with the required progression pathways and support to progress to HE after completing their VET studies. According to these studies, the barriers encountered by these students were mainly the result of an education system that was not designed to accommodate VET students wanting to progress to HE studies. Combining both these schools of thought leads to the proposition that the progression of VET-LSEG students could be jeopardised by both their VET and their LSEG background. This proposition highlights the need to investigate the barriers encountered by VET-LSEG students in Malaysia, with a specific focus on the students' background and the education system within which they receive their education and training.

After careful review and comparison of the evidence and arguments provided in the literature, seven major factors have been highlighted as associated with the barriers to HE encountered by VET-LSEG students in Malaysia. In addition to the education system previously highlighted, the other six factors include the low aspirations of students, financial issues, family background, low confidence, social influence and culture. The review outcomes of each factor are presented separately in the following section.

Low Aspirations

Students' aspirations have been identified as a major factor affecting students' decisions about education. Students with high aspirations for education show more interest in pursuing HE, and vice-versa. Studies such as Tamuri, Mahmud, and Bari (2005), and Nor, Roslan, Mohamed, Hassan, Ali, and Manaf (2011) have found that LSEG students tend to have lower aspirations for HE due to their disadvantaged family

and social backgrounds which do not encourage or support education. While Studies by Rosa and Teirney (2009) and Shariffuddin et al. (2014) have confirmed this claim, they have further suggested that the low aspirations can be especially significant among LSEG students from rural areas due to their lack of exposure to information about HE in terms of its benefits and availability.

According to Rosa and Teirney (2009), this lack of awareness causes students to overestimate the cost of HE and underestimate the availability of financial aid which subsequently leads to low aspirations. Shariffuddin et al. (2014) stated that this lack of exposure also causes LSEG students to miss the opportunities provided by government, including sponsorship and special education programmes that could inspire them towards HE. Studies conducted by the Centre for the Studies of Higher Education (2008) and Schindler and Reimer (2011) have also suggested that LSEG students tend to see more benefits in employment than HE due to their adverse family background which subsequently leads them to having low aspirations towards HE. Thus, in general, it has been claimed that students from LSEG backgrounds have lower aspirations for HE due to their disadvantaged backgrounds.

Not all studies, however, propose that LSEG students have low aspirations for HE. James (2002), and Bowden and Doughney (2010) have suggested that, regardless of socioeconomic class, students generally understand the significance of HE and often also have strong intentions of achieving such education, though not all might expend the effort required to attain it. Bowden and Doughney have blamed the low enrolment of LSEG students in HE on this lack of effort. According to their study, strong interest in HE can still be observed among students, it is just that their interest is not strong enough to motivate them to work hard and attain sufficient academic achievements to qualify them for HE study. Their argument is rather similar to the argument presented by Croll, Attwood, Fuller, and Last (2008), which highlights the misalignment between education and career. Croll et al. suggested that young students are generally ambitious and desirous of high level positions and well rewarded jobs, however, despite their strong ambitions, not all students work hard enough to achieve the academic success which enables them to obtain the desired occupation. Croll et al. categorise these aspirations

among VET-LSEG students as being either ‘strong determination and effort’, or merely ‘a wish with no action’. While Croll et al. described one aspect of the situation among the VET-LSEG students, the fact that these students are greatly disadvantaged by various other factors cannot be ignored.

Thus, it has been claimed that the low aspirations is a barrier which has stopped LSEG students from progressing to HE. It is also important to note, however, that while low aspirations has been identified as a significant factor in depriving students of HE study, not all LSEG students have been found to have low aspirations for HE. A number of studies (Bowden & Doughney, 2010; James, 2002) have found that LSEG students appreciate HE and show high interest in pursuing it. These findings suggest that it should not be assumed that VET-LSEG students all have low aspirations for HE. Instead, the aspirations of these students must be determined before deciding if low aspiration is indeed a significant factor affecting their progression to HE.

Financial factors

Despite the availability of financial assistance aimed at encouraging students’ participation in education, finance is still a significant issue affecting students’ aspirations especially at higher levels of education, defined in Malaysia as tertiary education at Bachelor degree level and above (Mohamed & Said, 2012). Finance provides people with the power and freedom to make decisions and realise their plans, it becomes an issue when it is limited and restricts people’s choices. Decisions have to be made based on available finance and the costs of education. Immediate needs, like food and shelter, will usually be prioritised while things beyond affordability are likely to be sacrificed, despite their importance to the affected people.

Financial issues can be caused by low income, low assets and high liabilities. For people from LSEG backgrounds who have little savings or assets, the problem is usually rooted in the limited income (Abu-Hassan, Ishak, Yusof, & Abdul-Rahim, 2005; Hashim, 1988; Hooi & Kala, 2008). This limited income determines the household’s affordability and what they are capable of spending. A limited income means there is less money to spend, and in some cases less willingness to spend it, especially on things

that are viewed less crucial for daily lives. This is especially true for those from the LSEG who receive low incomes and have little assets and savings to rely on (Abu-Hassan et al., 2005; Economic Planning Unit, 2004; Zainal et al., 2009).

Generally, the household income is one of the major factors determining an individual's ability to access HE which in most countries is usually not provided free (Ang, 2010; Benjamin, Marathamuthu, Muthaiyah, & Raman, 2011; Brinded, 2015; Lindsay, 2015). The financial issue exists when the income is insufficient to finance the education costs. Sulaiman, Ismail, Othman and Poo (2012) established a positive relationship between the household income and education expenditure, and claimed that families with low incomes are less likely to spend it on education. Long (2010) highlighted the cost of education which makes HE unaffordable for most people. While James (2002) argued that it is not only people with low incomes who find it difficult to afford the tuition fee; in many cases, people are also unwilling to spend money due to not being able to see the importance and benefits of HE.

The financially disadvantaged background also acts as a major discouraging factor to students' confidence in progressing to HE. According to James (2002), VET-LSEG students are usually less convinced that their family can actually afford the costs of HE. The Ontario Undergraduate Student Alliance (2011) argued that the financial deprivation of parents and other elder family members and their lack of experience of HE, often causes LSEG students to overestimate the cost of HE and underestimate the availability of financial assistance. The Ontario Undergraduate Student Alliance study also claimed that these financially disadvantaged students also tend to have greater anxiety over education costs and any debts that are incurred due to HE. Such anxiety usually results in parents who are reluctant to encourage students to pursue HE studies, and students who are reluctant to do so (Abdullah et al., 2013; Nor et al., 2011).

According to Sabates, Akyeampong, Westbrook, and Hunt (2010), other associated costs, especially the living and travel costs, that might be incurred during the course of studying are also of concern. These costs are especially significant to those who live a distance away from the institutions located in city areas, requiring them to either spend extra on the travelling costs to get to classes every day, or on

accommodation nearer to the institution. Past studies have shown the people most impacted are those from LSEG background living in rural areas (Baharudin, Hong, Lim, & Zulfeily, 2010; Hooi & Kala, 2008; James et al., 1999; Marwan, Sumintono, & Mislán, 2012). These extra associated costs increase the financial burden and demotivate LSEG from pursuing HE (Berg, 2008) resulting in HE becoming even more difficult to attain by those who are already concerned with the tuition fees (Colclough, Rose, & Tembon, 2000). Even in the situation where the tuition fees are waived, these associated costs can still be a major barrier to LSEG wishing to pursue HE studies.

The financial issues related to participating in HE involve not only the actual money spent on education but also the opportunity costs (James et al., 2008). Opportunity costs refer to the benefits, either monetary or non-monetary, that can potentially be lost due to a decision to pursue HE instead of doing other things, such as undertaking casual employment, working on the family run business like a hawker stall or a farm, or even just staying home to do domestic chores like cleaning or babysitting of the younger siblings. According to Sebates et al. (2010), the opportunity cost becomes greater as the children grow older, especially those who are old enough to legally work full time, because older children can work in more complicated jobs and earn more income. Aspiring students may be pressured by the family or the situation to work in order to bring home money, instead of spending money to finance their ongoing study.

The literature also suggests that LSEG students react differently to different financial assistance. Scholarships with no repayment terms, for example, and living allowances that cover accommodation and transportation, are generally more appreciated by the students and families, and can also act as a bigger motivation to encourage students to pursue further studies (Forsyth & Furlong, 2000; Tham, 2010; Zainal et al., 2009). Education loans, however, seem less attractive to LSEG students and their parents as they are less willing to take on debt to finance education, a debt that they may not be able to repay, and which does not necessarily guarantee future success, especially in terms of academic achievement and financial return (Forsyth & Furlong,

2000, 2003). Thus, offering educational loans might not work as well as other approaches to financial aid aimed at improving VET-LSEG students' aspirations for HE.

The financial issue is especially relevant to VET-LSEG students in Malaysia, because most are from big families with low incomes. The low income and big family size makes it difficult for the family to finance the education cost of the students (Shariffuddin et al., 2014). In addition, most of these students have experienced free education from primary to secondary and later to Vocational Certificate level, and with this experience, it can be difficult to convince them to finance HE which is not free (Ministry of Education, 2012c; Mohamed & Said, 2012).

The opportunity costs of further study, are perceived by VET-LSEG students to be higher compared with students progressing through the traditional academic education system (Schindler & Reimer, 2011; Tamuri et al., 2005). This is because VET students are trained with specific skills to work in related fields and graduate ready to commence work immediately. Most of these VET schools have industrial connections and contract to place the students to work immediately after the completion of their course. As it is common for LSEG students to put more weight upon job security (Schindler & Reimer, 2011), the availability of job opportunities upon graduation adds to the difficulties VET students have in choosing HE instead of employment.

The literature indicates, therefore, that financial shortcoming is a barrier affecting VET-LSEG students' aspirations for HE. It is also apparent that Malaysian governments have tried to compensate for these shortcoming through the provision of scholarships and other financial help such as loans and living allowances (Ministry of Education, 2012b). There is doubt, however, that the financial assistance that is offered is good enough to compensate for the opportunity costs perceived by the students and their family. The high dropout rate from free secondary education observed among LSEG students (Ministry of Education, 2013), also casts doubt on whether scholarships or fees waiver would be effective in attracting participation.

Family background

Family background is another major factor contributing to the barriers to HE encountered by LSEG students, with parental and elder family members' education level and occupation being identified as a key issue. According to Muji (2007), a student's aspiration towards education is usually affected by their parents' educational achievement, with the low academic achievements of parents contributing to the students' low aspirations towards HE. Nor et al., (2011) agreed and explained that the major impact comes from the parents' indifferent attitudes towards education which subsequently diminishes the students' desire to pursue HE. The low educational achievement of parents also contributes to students' confidence or belief that they could be successful in HE.

Parents with low educational achievement themselves, have been found to be less likely to encourage and support, financially and emotionally, their children's decision to pursue HE (Muijs, 2007). The absence of encouragement makes it easy for the students to overlook the importance of HE, while the lack of financial support makes it difficult for students who are dependent on parental resources to even apply for access to HE. The importance and benefits of HE has also been found to be less well understood by LSEG parents with low educational achievements themselves. Otto (2000) found that children's ideas about HE develop according to the parents' ideas and expectations. Parents who are indifferent to education tend to transfer the same attitudes and perceptions to their children, potentially causing them to willingly pass over the opportunity to pursue HE.

Parents' stronger belief in employment also tends to push children into seeking employment instead of pursuing HE. Parents' occupation, determined by their level of education, can also limit students' options in pursuing HE (Bryant, Zvonkovic, & Reynolds, 2006), as parents are the students' major source of knowledge and beliefs, especially in choosing the path for after school development. The limited educational background and professional work exposure of LSEG parents with low academic achievements, restricts their ability to provide information and expose their children to the benefits of HE. Jordan and Plank (2000) have suggested that this lack of information

and exposure is usually the primary reason for students' failure to progress into HE. This impact tends to be stronger if students live in an environment which is surrounded by people with similar educational and occupational backgrounds as their parents. These circumstances create an environment which drives students to comply with the common occupational track and life style, rather than pursue HE which is usually perceived as rare and hard to achieve.

Students also develop their knowledge about careers and occupations through direct observations and overheard conversations about the parents' profession (Bryant et al., 2006). Such knowledge and observations usually shapes students' career interest which later develops into career aspirations that direct them into similar career paths. This influence is stronger among students that are required to participate in the parents' work, such as helping out in the family businesses like hawker stalls, or agricultural activities like farming or rubber tapping. Such circumstances provide a comfort in following through a career path that is familiar to both the students and the family, but also limits the students' aspirations and motivations towards other career paths, especially those requiring HE qualifications. This influence magnifies if the parents expect their children to inherit their profession or business, and under such circumstances, students tend to obey the request and comply with the desire of the parents (Otto, 2000). As a result, these children tend to have lower aspirations and are less motivated to pursue HE, preferring to follow the 'foot-steps' of their parents.

Not all studies have suggested a relationship between family background and students' aspirations towards education. Bowden & Doughney (2010) stated that HE is perceived as important across all socioeconomic classes and that students receive encouragement from parents to progress and succeed academically, regardless of socioeconomic levels. Sulaiman, Othman, Ismail, and Poo (2012) argued that although the household income determines the parents' capacity to provide for their children's education, their educational achievement and career development has no significant effect on the students' educational progression. Sulaiman et al. claimed that parents disregard their own educational achievement, generally wanting to provide children with the best education and prefer the children attain the highest achievement possible. Their

study found that the level of education of the parents is not significantly related to the amount of expenses they are willing to spend on children's education. It also suggested that parents with lower education attainment are generally more concerned about the academic achievement of the children and are usually more willing to provide for children's education.

Most VET-LSEG students in Malaysia come from backgrounds with characteristics that could hinder their access to and progress in HE, including low household incomes, and parents with lower educational achievements who undertake occupations that do not require high academic qualifications. There is no clear evidence, however, that the progress of these students into HE is adversely influenced by these factors; however, they may result in more emphasis being given to employment than HE. This is exacerbated by the fact that these students have selected VET which emphasises career readiness, instead of academic readiness for HE. This study seeks to clarify this situation, as it examines whether the family background, especially the parents' occupation and educational levels is a factor affecting the choice of VET.

Low confidence

James (2002) claimed that VET students from LSEG backgrounds display a lack of confidence in their ability to attain HE. James' claim has been echoed by other studies (Berg, 2008; Devlin & McKay, 2011; Hahs-Vaughn, 2004; O'Shea, Onsmann, & McKay, 2010), with most of these studies associating the low confidence with students' previous educational backgrounds. O'Shea et al. claimed that VET-LSEG students tended to see HE, especially academic studies, as more difficult and a higher level education that is 'well above that of TAFE (VET)' (p. 7). This study also found that the VET-LSEG students tended to believe themselves to have come from a different educational background, having experienced different types of training that had not equipped them with the necessary knowledge to handle HE studies. These perceptions usually result in students having both lower confidence and aspirations for HE. Schindler and Reimer (2011) added that the less advantaged background might have caused VET-LSEG

students to ‘overestimate the level of academic requirements of tertiary institutions’ and to be ‘less optimistic about their prospect to succeed in higher education’ (p. 265).

The Ontario Undergraduate Student Alliance (2011) found that the lower confidence of VET-LSEG students towards HE could also have been caused by their low academic achievements in previous years of schooling. According to this study, LSEG students tended to show lower academic achievements compared with peers from higher socioeconomic groups, as a result of their disadvantaged backgrounds. The authors argued that this background resulted in less conducive learning environments due to financial constraints, lack of guidance and encouragement from parents with low educational achievement themselves, and not being able to afford extra tuition classes and learning materials. Lower academic achievement, therefore, creates low esteem among the LSEG students and causes them to self-select themselves out of HE that is perceived academically focused and more suitable for brighter students.

James (2008) also suggested that the less satisfying learning experiences of LSEG students and their weak achievement during the earlier school years, also created doubts in students’ minds about their ability to cope with HE studies and completing the degree successfully. Devlin and McKay (2011) added that compared with their counterparts from higher socioeconomic groups, LSEG students also tend to be less equipped with skills, such as computer and language skills that are necessary to make learning successful in a HE environment. According to Devlin and McKay, this lack of skills and knowledge would potentially add to the students’ lack of confidence in pursuing HE, resulting in them feeling incompetent and unfit for studies at this level.

VET-LSEG students in Malaysia come from similar backgrounds to those identified in the literature as contributing to low confidence in pursuing HE. Studies conducted by Tamuri et al. (2005) and Nor et al. (2009) indicated that students generally enrolled in VET schools due to their low academic achievement in traditional schools. Such previous experience of schooling and weak academic performance might impact the self-esteem of LSEG students and weaken their confidence in coping with the higher level education that emphasises theoretical studies, which are perceived to be more complicated and difficult (Nor et al., 2011). Students used to VET study, which focuses

on specific skills and hands-on training, may also doubt their ability to adapt to the HE learning environment that emphasises traditional classroom teaching and theoretical learning (Harris, Rainey, & Sumner, 2006; O'Shea et al., 2010).

Social influence

People that the students connect and socialise with, including friends, neighbours or even teachers and counsellors at school, have been found to provide a further source of influence upon LSEG students' aspirations for HE (Jordan & Plank, 2000; Shariffuddin et al., 2014; Winston & Zimmerman, 2004). According to these studies, the influence of social groups are not necessarily negative, rather it depends very much on the attitudes of these people towards HE. People with positive attitudes towards HE usually provide a positive influence on VET-LSEG students, while people with negative attitudes usually impact negatively.

While acknowledging the influence of different social groups or acquaintances, Winston & Zimmerman (2004), and Berg (2008) have claimed that the influence of friends, especially those people that students actively socialise with in school and during other social activities, are especially significant in affecting students' aspirations towards HE. LSEG students, however, who are often isolated in poor community schools due to their family background, or who may be socially isolated from academically well-performing peers, due to their own weak academic achievements, are unlikely to gain many benefits from the influence of peers (Berg, 2008). Tamuri, Mahmud & Bari (2005) argued that LSEG students are usually poorly motivated to do well in the early school years due to being surrounded by peers in the poor neighbourhoods who are themselves less interested in studying and maintain lower aspirations towards HE.

Neighbours have also been identified as a significant influence on LSEG students' aspirations for HE (Berg, 2008; Overman, 2002; Stewart, Stewart, & Simons, 2007). Their influence can be either positive or negative and varies according to their characteristics, especially their socioeconomic status and occupation. Schindler & Reimer (2011) found that students who socialised in academic environments with people who are interested in studying and pursuing academic studies, usually show more

appreciation and interest in education. Stewart et al. (2007), however, found that students who live in disadvantaged neighbourhoods which commonly have high crime and unemployment rates, are usually more prone to “negative attitudes and problem behaviours” (p. 913). According to Stewart et al., these negative attitudes and behaviours usually lead to students’ bad academic performance and low educational aspirations.

Overman (2002) also found that neighbourhoods reflected the structure of the labour market and social network, with the poor neighbourhoods consisting of a high proportion of school dropouts and low educational achievers, potentially discouraging LSEG students from pursuing HE and contributing to them dropping out of schools early. Feedback from high school guidance counsellors (Jordan & Plank, (2000), indicated that the low expectation about academic performance and achievement, commonly accepted in the disadvantaged neighbourhoods, also contributed to students’ low aspirations for HE. According to this study, the low expectation demotivates the students’ learning efforts and negatively affects their academic performance during the early school years, which subsequently leaves them little reason “to be hopeful about their education future” (p. 40).

Teachers and school counsellors play a significant role in influencing students’ educational aspirations. Kirk, Lewis, Scott, Wren, Nilsen, and Colvin (2012) found that teachers who maintain good relationships with students, encourage academic achievements and aspirations for further educations. While Jordan and Plank (2000) suggested that counsellors who provide good guidance and correct advice could also help to prepare the students for future education development. The level of such encouragement and guidance has been found to increase, however, with socioeconomic status (James et al., 1999), with students from the LSEG receiving less encouragement from teachers compared with those from higher socioeconomic groups. James et al., also found that LSEG students often felt neglected by their teachers when it came to getting advice and encouragement to pursue HE.

VET-LSEG students in Malaysia usually gathered in a secluded learning environment which privileges skills training and employment readiness after graduation,

may have received more encouragement to work than pursue further education (Schindler & Reimer, 2011). Though there is no clear evidence as to the extent to which these students have been driven to obtain employment or how adversely they may have been advised about HE in school, it is stated in Malaysian policy that VET institutions must produce a specifically skilled workforce, especially at technical and blue collar level work positions, in order to meet the demand of various industries (Economic Planning Unit, 2010b; Ministry of Education, 2014b). Thus, with the VET institutions' objectives and mission in mind, it is questionable as to how flexible and positive VET teachers and counsellors might be in terms of influencing and motivating VET students to pursue HE instead of employment opportunities. In addition, the lack of articulation pathways further limits the flexibility of teachers and counsellors in providing advice and guidance about HE. Therefore, further investigation is required in this regard.

Culture

Culture is one of the major factors determining a person's behaviour. Studies such as Plowman (2006) and Maschinot (2008) have suggested that culture, which takes shape through observations and interactions, forms the individual's beliefs and values, which subsequently affect their future development. As suggested by Mieschbuehler and Dexter (2010), however, students' beliefs about and valuing of education depends on the level of returns or benefits that they can perceive in education. Thus, in line with studies such as James (2002), and Schindler and Reimer (2010), Mieschbuehler and Dexter have suggested that students who value HE and believe that it would bring benefits suited to their needs, display more positive attitudes towards studying and attaining HE awards. Whilst LSEG students who do not see benefits in HE usually show less interest in studying and have lower aspirations for HE.

Culture also affects the attitudes and behaviour of individuals toward education (Maschinot, 2008). Tamuri et al. (2005), Chenard (2010) and Shariffuddin et al. (2014) have argued that students from different socioeconomic classes demonstrate different attitudes towards education, which subsequently determines their learning behaviour. According to Tamuri et al., LSEG students who come from a culture associated with

lower academic family background and poor neighbourhoods usually show less satisfying attitudes and academic learning in the classroom, including being labelled as 'lazy' and displaying a 'lack of interest' and "too shy to ask for assistance" (p. 31). Sharifuddin et al. explained that these less satisfying learning behaviours are caused by a laidback and 'take it easy' attitude inherited within their society, that subsequently lead to low academic achievements throughout the early school years. As a result, not only is their confidence and interest in further learning disrupted, but the opportunity to participate in HE will also be jeopardised due to the poor academic performances which mean they fail to meet the course entry requirements.

The education system

In Malaysia, students with skills and VET backgrounds are not provided with the necessary progression pathways to attain HE (Abdullah, 2012; TAFE Directors Australia, 2014; The World Bank, 2012d; Wheelahan, 2009). According to the literature, the problem exists not only because the HE system is designed and structured in ways which works against VET-LSEG students, but also because the VET system has not been designed in the way which encourages students' aspirations or makes HE more accessible to the VET students, especially those from LSEG backgrounds. The barriers inherent within each education system are presented in following sections.

The VET system

The VET system itself can be a barrier to HE for VET-LSEG students in Malaysia. According to The World Bank (2012), the education system in Malaysia disqualifies students who have graduated from VET, from entering HE, especially the country's public HE institutions. Both Hee (1994) and Pang, Narunan & Sim (2011) have suggested that, as VET started out in Malaysia as technical and vocational skills training institutions, its roots, and its subsequent development and identity, differ significantly from the mainstream academic education system. In education circles, VET is perceived more as skills training for specific technical or vocational work rather than proper education facilitating knowledge enrichment and academic enhancement. In society as a

whole, VET is perceived as an alternate education and training system for weak students who have problem coping with academic learning (Suradin et al., 2010).

Despite the government's various efforts to revamp the system, including incorporating it as part of the mainstream education system, general perceptions remain unchanged: VET is still VET, VET students are still VET students. These are evidenced in the fact that VET programmes are offered only through VET institutions, and all VET institutions are governed under the Division of Technical and Vocational Education and Training within MOE instead of MOE central administration (Economic Planning Unit, 2010c; Ministry of Education, 2014b; Tham, 2010). Such perceptions and system segregation manifests the gap between VET and the academic educational system which subsequently restricts students' mobility between the two systems. Generally, as suggested in Suradin et al. (2010), parents are reluctant to enrol their children into the VET system. Students from mainstream education pathways are free but reluctant to move 'downward' to the vocational system, and the vocational students are both restricted and lack the confidence to move 'upward' to the mainstream academic system.

The general perception about VET and the mainstream educational system is not the main factor contributing to the restriction of students' mobility between the two systems. The main problem lies in the different missions that have been entrusted to each system, resulting in a mismatch between the systems that subsequently restricts students' mobility between them.

Mismatch of mission and objective

Pang et al. (2011) noted that VET was established to take care of the needs of various industries through producing a skilled workforce based specifically on the requirements of the industries. This mission identifies two major aspects that VET has which differs from the mainstream education system. Firstly, the mission requires VET to prioritise industries' needs and to be sensitive to economic developments in the country. These requirements shape the focus and target of VET differently from the existing mainstream education system which prioritises students' learning and the general education needs of the broader society. Secondly, the mission sets VET's

objective “producing skills needed for work” (Buchanan, Yu, Marginson & Wheelahan, 2009, p.9) which is not only different from the mainstream educational systems, which focuses on knowledge building and intellectual development, but is also considered second rank in intellectual and education circles.

These different missions place VET in a different landscape to the mainstream educational system in terms of its subsequent development and achievements. While the academic educational system continues its role in developing intelligence and instilling individuals with knowledge of various disciplines, VET takes a more focused role in facilitating economic efficiency through producing skilled workforce for various industries. These different missions and objectives initiated a gap between the two systems which subsequently led to mismatches in both policies and operations. These mismatches are especially apparent in their products, including programmes and curricula, as well as their practices, including teaching and learning, that contribute significantly to restrict students’ mobility between the both systems (Buchanan, Yu, Marginson, & Wheelahan, 2009; Hyland, 2014).

Mismatch of programme designs

The differing missions have established a different landscape for each system for designing and developing its programmes. VET which emphasises skills development and industries’ requirements adopts the Concept of Workplace Competencies and a work-based approach to designing its programmes and constructing curriculum (Department of Skills Development, 2011). Programme development is guided through the identification of jobs in a given industry. Once the job is identified, the programme title is decided upon according to the job functions; for example, the Certificate of Welding is identified from the welding job. Once the programme is named, the subsequent process involves building up the curricula through pinpointing and compiling the list of duties and tasks in the identified job, and matching the listed duties and tasks with the National Occupational Skill Standards (NOSS) (Halasz, 1994). These duties and tasks are then finalised and formalised as the programmes content (See Figure 2.1).

This workplace and competencies based approach used when developing VET programmes is common and is carried out with involvement of experienced practitioners and experts from the relevant industries. According to the Department of Skills Development, the process provides the best result as the programme is written based on the feedback from the related industries that capture the requirements of the real workplace. Additionally, the literature also suggested that this workplace and competencies based approach produces job and skill focused training outcomes that are specifically aligned with the specifications of the real workplace and requirements of the related industries. Such job and skill focused training also ensures the students obtain all the necessary skills required for the job, resulting in job-ready graduates by the end of the programme (Middleton, 1988). Though this is an ambitious claim made in literature which has yet to be proven, such belief is widely accepted and adopted by the VET institutions and practitioners in Malaysia.

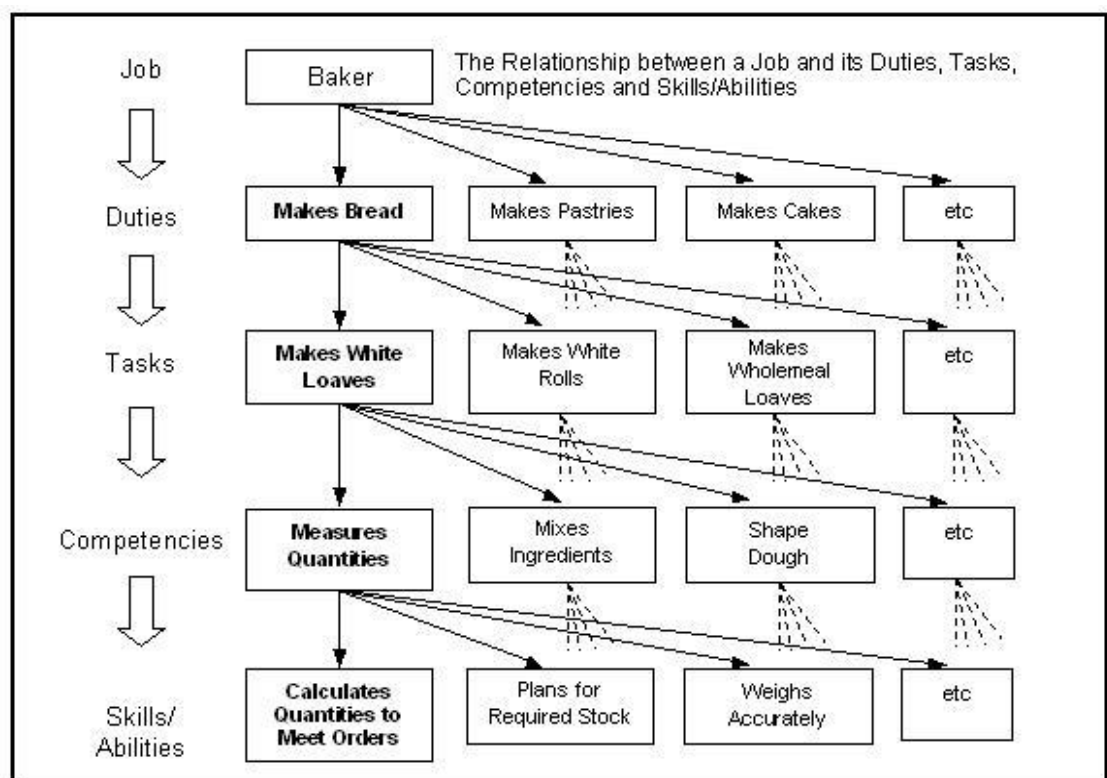


Figure 2.1 Skills Programme Development Flow Chart (Source: Department of Skills Development, 2011, p3)

While such a job-focused and competency-based approach enables VET to produce programmes that match explicitly the demands of industry, it has resulted in a mismatch with courses offered through the HE system, that cover a broader spectrum of studies in a related field. By way of example, the engineering related VET programme, Certificate or Diploma in Welding or Automotive Technology, enables focused training for the job of welding in the technical automotive environment, but the scope of the programme is not as broad as related programmes offered through the mainstream education system, such as the Certificate or Diploma in Mechanical or Electronic Engineering. A comparison of the content of the two programmes also shows that Welding or Automotive Technology is equivalent to part of the contents in the related engineering programme offered in the HE system, though with more extensive technical and practical training.

This mismatch of programmes results in two major repercussions for VET-LSEG students who wish to progress to HE. Firstly, students find it difficult to match suitable programmes to progress onto in the mainstream educational system because of the difference in outcomes in the HE system, which emphasises academic learning and intellectual development. In some cases, students might find programmes that are related to their VET field of studies, for example Certificate or Diploma in Welding in VET and the Bachelor of Engineering in HE system, but the former programme is so limited in scope, they will not be able to qualify for admission into the Bachelor in Engineering (Pang et al., 2011).

Secondly, they find difficulty in identifying suitable higher level programmes, especially at the Bachelor degree or higher level, to continue their study within the VET system because most VET programmes are offered at Certificate level and only a selected few are offered at Diploma and Advanced Diploma level (Bax & Hassan, 2003). Though in certain cases suitable higher level VET programmes are offered through private or foreign institutions, the articulation arrangements are usually not clearly defined for the students or VET institutions (Mohamad, Razali, & Jalil, 2009; Rashid & Nasie, 2003). The lack of information and vague articulation arrangement

have not only failed to encourage VET students' participation in higher learning, but have also obscured the available progression pathways for interested students. In addition to this, as these programmes are offered through private and foreign institutions, like The Otomotive College and Malaysia France Institute (MFI), the fees are usually not government subsidized and can be too costly for VET-LSEG students who are already financially disadvantaged.

There is currently no literature clearly explaining the lack of progression pathways and higher level programmes within the VET system in Malaysia. Judging by how market driven the education institutions are in Malaysia, it is somewhat logical to blame the lack of pathways on the lack of demand, either from potential students or from potential employers. The reasons for the lack of demand have been explained in studies such as Buchanan et al. (2009), Pang, Narunan and Sim (2011) and Long (2014), who claimed that industry expects the VET system to deliver entry level technical workforce, and have collaborated with VET system to develop programmes that are specific to the relevant entry level jobs. Industry also offers apprenticeship and sponsorship programmes to encourage students to enrol in VET and graduate with relevant certification. Until such close collaborations and expectations change, the demand for VET programmes to focus on the lower level qualification programmes will remain, leaving the VET system with little motivation for offering higher level VET programmes.

While possibilities exist for VET to develop higher level programmes, how well the government and various industries support such development, especially through the provision of work opportunities for graduates is not known. Judging by the current situation in which higher level job vacancies in industries are aligned with the disciplines of study in HE, and employers show preference for hiring university graduates with higher level academic qualifications (Pang et al., 2011; Schindler & Reimer, 2011), not only will industries find it difficult to change their common employment practices, but VET graduates will continue to find it difficult to compete for employment with those universities graduates. Without job opportunities, it is difficult to boost the demand from students for the higher level VET programmes, while a lack of

demand, impacts upon the motivation to develop and offer the higher level VET programmes within the VET system.

Mismatch of curriculum designs

Apart from the difficulty in aligning with suitable HE programmes, VET curricula fail to prepare students, intellectually and emotionally for HE (Ambrose et al., 2013; Long, 2014; Middleton, 1988). Ambrose et al. (2013) blame this on the different reference groups used in each system which results in different kinds of knowledge being privileged. According to the study, VET predominantly uses industry as a reference group in developing curricula, resulting in industrially-focused and workplace-based programmes, compared with HE systems which refers to the academic discipline as the basis for their curriculum design. Middleton (1998) and Long (2014) have also pointed out that VET curricula are more suitable as pre-employment training than as preparation for HE. Buchanan et al. (2009) have further explained that the narrow scope of VET curricula, aimed at “producing skills needed to work” (p. 9) are just not sufficient to prepare students for HE which demands higher level cognitive skills and academic understandings. Though VET providers have tried to improve the programmes through incorporating analytical and cognitive elements into their existing curricula, Cornford (2004) argued that such “Lego-block like” (p. 3) inclusions can hardly produce any positive results in improving the current structures that are fundamentally flawed.

In Malaysia, VET curricula are designed in adherence to policy which requires students to experience 30 percent theory and 70 percent practical training to students (Ramasamy & Rowley, 2005). Such limited scope of content does not enable easy comparison with the curricula of HE programmes, which usually focus on at least 70 percent theory and less than 30 percent practical training according to the MQA requirements. The practical emphasis and less theory-focused curricula in VET provide a weak academic foundation for students interested in HE, and constitutes a mismatch with curricula in academic programmes in terms of standard and quality. As a result, the VET curricula can only produce students that Wheelahan (2013) referred to as

“technical, paraprofessional and trade” (p. 6), qualified for entry level jobs in the labour market, but who are neither qualified or ready for HE.

Such mismatch in curriculum design places VET graduates in a disadvantaged position, especially when applying for admission into HE which is mostly offered through the academic focused mainstream system in the country. According to Suradin et al. (2010), VET graduates with only VET training and certification are viewed as academically underprepared and lacking the theoretical knowledge and cognitive skills necessary to succeed in HE. While these workplace skills-focused curricula teach skills, they do not develop the knowledge that underpins the skills (Moodie, 2003). Nor do they “develop skills other than workplace skills, such as learning how to learn or study skills; and it does not develop students’ capacity for self-evaluation, critical reflection” (p. 5) that are deemed important for higher level learning.

Studies by both Mohamad, Saud and Ahmad (2009) and Ramlee (1999) also pointed to concerns about the quality of VET teachers which in turn impact perceptions about the quality of VET graduates, especially in terms of their level of knowledge and skills and hence readiness for higher level education. VET teachers or trainers are mostly VET trained themselves, and with their highest qualifications at VET Level-Four certificate (Mohamad, Saud, et al., 2009; Razzaly, Kaprawi, & Spahat, 2010), may not have the capability to equip students with the suitable knowledge and skills that are necessary to prepare them for HE, especially academic knowledge and cognitive skills that are usually not emphasized in the VET curricula. Without personal experience of HE, these VET teachers and trainers may not be able to influence or inspire and motivate students towards HE.

Mismatch of teaching and learning practices

Compared with HE, the skills focused and competency based curriculum design in VET also cultivates a different way of teaching and learning. According to Ambrose et al. (2013), VET provides more structured teaching with clearly directed learning. In order to achieve specific skills in each lesson, such educational practise differs from lessons in HE environment which require and encourage students to undertake more

individual exploration and independent learning. Brown, Withers, Down, Figgi and McManus (2011) also pointed out that VET adopts teaching or pedagogical styles which are centred around students' individual needs. Accordingly, VET students are used to learning in smaller class and receiving personal attention from the teacher, which again differs from the teaching and learning styles adopted in HE, where lectures are conducted in large groups and independent learning and research is required.

Furthermore, the 30 percent theory and 70 percent practical curriculum structure also nurtures different learning habits and attitudes in VET students (Ramasamy & Rowley, 2005). VET students are used to a more flexible learning environment that emphasises practical teaching and hands-on learning. HE learning in comparison, may entail lengthy theoretical lectures, and essay writing and theoretical studies that are essential in higher level learning, which could be daunting for some of the VET students. Sudden changes in pedagogical and learning approaches such as these could also pose difficulties for VET graduates trying to cope with the HE studies (Pearce, Murphy, & Conroy, 2000).

Mismatch of assessment structure

The Competency Based Education and Training (CBET) approach used in VET education, differs markedly in standards and quality from those adopted in the academic education environment. Biggs and Tang (2007) have claimed that the CBET approach is too narrow and does not adequately provide accurate outcomes compared with the requirements in the traditional academic environment. Ewer and Ablet (1996) also questioned the quality and consistency of assessment practices that focus on practical assessment which is prone to the influence of attitudes and behaviours of learners. Bell and Mitchell (2000) questioned the quality of breaking down tasks into separate chunks for assessment, and Cornford (2000) criticised the standards when assessing the bits and pieces of tasks using objectives that themselves have been precisely created to make CBET feasible.

Furthermore, the competency-based and non-graded assessment in VET which assesses students repeatedly until the required competency is achieved is also in contrast

to the assessment practices in HE that Ambrose et al. (2006) described as “infrequent, high-stakes, sparsely scaffolded assessment” (p. A121). Pearce et al. (2000) extended this argument, indicating that “This pass/fail/competent/not competent assessment is a fundamental of competency based training, and can be inadequate in particular where students articulate to higher education” (p. 538) which emphasises the importance of comprehensive assessment structures that go beyond repetitive and non-graded competency tests. Although Pearce et al.’s claim is acknowledged, there are alternative perspectives. For example, William and Bateman (2003) suggested policy changes to provide graded assessment of competency in the Australian VET sector. In Malaysia, however, at the time of the study, competency assessment was non-graded.

Thus, the mismatch and shortfalls identified in the assessment system of VET have raised questions about the reliability and quality of its processes and outcomes (Ewer & Ablett, 1996). These shortfalls also highlighted contradictions between VET and the assessment policy of HE system that demands more solid proof of students’ learning, demonstrated through written examination and assignments (Ambrose et al., 2013; Pearce et al., 2000). This mismatch raises concerns about VET-LSEG students’ capacity to cope with the assessment structure adopted in HE system, and subsequently their ability to cope with HE studies. Such scepticism might cause VET-LSEG students to be viewed as unsuitable candidates for HE studies, thereby jeopardising their opportunity to get admitted to HE studies after graduating through VET.

In summary, the four mismatches identified above, mismatch of mission and objective, programme designs, teaching and learning practices, and assessment practices have resulted in a gap between the VET and HE system in Malaysia. If as Mills, McLaughlin and Carnegie (2013) have suggested, student progression and mobility requires a “good-fit” (p. 12) between the VET and HE programmes; appropriate preparation in terms of learning of relevant skills and knowledge in the related field; and appropriate preparation for HE, the mismatches identified between the two systems may impact VET students’ capacity to qualify for and cope with HE.

In addition, the performance of the VET system, including the VET institutions and staff, are bound by and assessed according to specific performance requirements.

Such performance requirements are tied closely to the mission entrusted to the system which then determines the potential of the VET system getting future funding and subsidies from the government. Since the main mission of the VET system is to prepare students to enter labour market immediately after the training, it is questionable how far performance requirements motivate VET system, especially in encouraging and supporting students to pursue HE studies instead of joining the industry's workforce. It is also questionable if the VET institutions and VET staff, including counsellors, would discourage students from pursuing HE in order to fulfil their own work performance requirements.

The HE system

The country's continuous efforts to make Malaysia a regional education hub by 2020 has resulted in an increase in the number of universities in the country, from only one university in 1957 to a total of 733 HE institutions today (2016). This total includes 20 public universities and 201 public funded colleges and university colleges, as well as 512 private institutions, offering over 3000 programmes ranging from certificate level to PhD. Although the expansion and the increasing number of HE institutions increases the opportunity to access HE, it has not increased the opportunities for the VET-LSEG students or graduates. One of the major problems encountered by the VET-LSEG students in progressing to HE is the increasing cost of education resulting HE becoming unaffordable for VET-LSEG students (Ang, 2010; Benjamin et al., 2011).

For students with few financial constraints, the increasing numbers of institutions and varieties of programmes on offer have provided more opportunities for students who wish to progress to HE. With the increasing number of HE institutions, students with appropriate academic backgrounds can choose to study any programme in any institution, either public or private, within Malaysia or in other countries. However, such flexibility is not available to the VET-LSEG students whose progression is restricted, not only by their adverse financial situation but also their disadvantaged background, as discussed earlier. Other than the expensive tuition fees of private institutions, ranging from AUD3000 to AUD10000 a year (E-Tawau, 2014), there are also additional high

living costs experienced by many LSEG students from residential and remote areas who have to relocate to the cities where most of the private institutions are located. These high tuition fees and potential living costs make private HE institutions too expensive for VET-LSEG students, thereby limiting their choice to public institutions that charge only a small fraction, approximately RM1500 (AUD500) or less depending on programme per year (Benjamin et al., 2011; Lee, 2015).

Though the relatively affordable fees make public HE institutions a more suitable option for VET-LSEG students, they face other issues beyond affordability, due to the nature of the HE system itself. While the VET system presents numerous issues that makes progression difficult for VET graduates, the rigidity and stringency in the public HE system has made the progression even more difficult for VET-LSEG students. In this regard, two major issues have been identified that affect the progression of VET-LSEG students: the lack of recognition of VET in academic circles and the lack of collaboration between VET and HE systems.

Lack of recognition

In the past, it has been reported that VET graduates are not qualified to apply for HE in Malaysia (The World Bank, 2012c); while there is some truth to this claim, the real situation is more complicated. According to the formal entry requirements tabled by Ministry of Education Malaysia, VET certifications, including SPMV (Malaysian High School Certificate for Vocational Training) and skill certificates (SKM), are listed as part of the formal entry requirements for admission into HE (Ministry of Education, 2014a; Pang et al., 2011). While these qualifications are listed as part of the entry requirements, VET certification gains little credit towards admission into HE, and VET graduates who do apply are rarely successful, with most of these applications being filtered out during the admission process. Thus, while on paper, VET graduates are qualified to apply for HE, in practise these graduates are usually rejected for admission by HE institutions, especially by the public funded universities that are considered elite and prestigious (Arokiasamy, 2012). Such outcomes are mainly due to the negative perceptions of the VET system in Malaysia.

According to Hee (1994), the VET system is considered to be second rate and relegated to the bottom of the education hierarchy in Malaysia. What Hee described is not something promoted by the Ministry of Education, but is rather a general perception of the Malaysian people, especially in academic circles. In support of such perceptions, Emat (1993) and Suradin et al. (2010) stated that the VET system which has less focus on academic education, mostly attracts students that show less interest and perform weakly in academic studies. Such negative perceptions have not only placed VET in an inferior position as compared with the more academic HE system, but have also placed VET students in a disadvantaged position as compared with students within HE.

Furthermore, studies such as Buchanan et al. (2009) and Pang (2010) suggested that VET education is intended to prepare students for employment rather than HE. Moodie (2003) and Chen (2009) agreed, indicating that students graduating through the VET system, are usually only trained with specific skills that are required to do specific jobs, without the knowledge that underpins the skills. Such graduates usually show weak academic achievement and also lack the cognitive and higher level analytical skills that are necessary for higher level education. These negative images about VET-LSEG students have contributed to the refusal by most HE institutions to recognise either the VET programmes or the VET students who graduate through the system.

The opportunity to study at a HE institution, especially within public institutions, is very limited and highly competitive especially for students applying through the public academic school system. Most HE institutions admit students based on academic merit and the entry requirements of the public higher institutions are usually very stringent. As described in Ministry of Education (2014a) and Pang (2010), different programmes have different entry requirements and specialised programmes like Engineering or Accounting, usually require applicants to have achieved Grade A or at least B, in specific subjects like Science or Mathematics. Consequently, VET students who come with only skills focused certification and skills training usually have difficulty meeting these requirements and stand a very low chance in getting approval for admission. Even in programmes with less stringent entry requirements, VET graduates face stiff competition from other students applying as graduates from the

academic education system who can present evidence of a stronger academic background.

Thus, taken together, the bias against and lack of recognition of VET graduates by the HE system, results in limited opportunities available for their continued study in HE. The tight competition that VET students face, and the negative perceptions of VET graduates result in skills-trained VET graduates being viewed less favourably when compared with students from a more academic backgrounds. The situation is especially true for VET students with only VET or skills certificates, who apply for entry into the first year of bachelor degree programmes alongside students from other secondary schools or pre-university colleges applying with the Malaysian Certificate of Education (which is generally referred to SPM in Malaysia with equivalent recognition as O-Level in British education system and Year 11 under Australian system) and Malaysian Higher School Certificate (generally known as STPM in Malaysia equivalent to the A-Level in the British education system and Year 12 under the Australian system). In such situations, preference is usually given to students with academic backgrounds, especially those applying with national SPM and STPM certifications.

Lack of collaboration

The lack of progression pathways for VET graduates within the HE system is due to lack of suitable programmes that match the needs and prior learning of VET students. Though the problem is mainly caused by the mismatch of programme and curriculum design between the VET system and the HE system, the root of the problem is traceable to the systems that are overseen by separate government ministries and which have not encouraged collaboration between the systems. The lack of collaboration results in different focus in policy and strategic planning, which subsequently causes greater gaps and divisions between the two systems (Abdullah, 2012; Leong, 2010; Tham, 2010). The division between the VET and HE systems can be observed through the administration and mission of the two systems, where the VET is governed under the Ministry of Education and managed by the Department of Technical and Vocational Education with specific focus in developing the technical and vocational education in

Malaysia (Pang et al., 2011), whilst the HE system is governed by the Ministry of Higher Education with specific objective to develop the higher level academic education in the country (Ministry of Education, 2012d).

The separate administrations have overseen the development of each system in different directions, thereby causing difficulties for both systems in developing strategies that are coherent and mutually beneficial, resulting in a widening of the gap between them and mitigating against future cooperation. In this regard, the lack of progression pathways for VET graduates provides evidence of a lack of collaboration between the two systems. Not only is it a failure in collaboration of the HE and VET systems to develop programmes that are relevant to the needs of VET graduates, but it is also a failure of the VET system in producing graduates that meet the requirements for HE.

This collaboration also inhibits the flow of information that can be useful for students' progression. Studies such as Byrnes, Paez and Blacker (2010) and Paez, Byrnes, Blacker, Jackson and Dwyer (2011) indicated that neither the VET institutions nor their students receive clear information regarding progression or articulation arrangements for VET graduates into HE studies. This lack of information makes it difficult for VET institutions to properly prepare or guide VET graduates in applying to HE institutions. This impacts VET-LSEG students in particular, who are often not aware of the opportunities for progression to HE while experiencing the added burden of preparing their state of mind as well as gaining the right qualifications. In most cases, this results in VET-LSEG not sending in the appropriate application forms (Byrnes et al., 2010; Paez et al., 2011).

While a lack of collaboration between the two systems impacts upon the availability of progression pathways for VET-LSEG graduates, a lack of interest and willingness of HE to collaborate with the VET system is also suggested by the lack of HE programmes that are VET-based or VET-‘friendly’. This lack of interest could be caused by the potential high cost of developing and offering VET programmes that usually require expensive equipment and facilities. According to Middleton (1988), such high costs usually make VET a “socially less profitable investment” (p. 1) for HE institutions. This lack of interest is also due to the lack of demand for higher level VET

programmes, especially at Bachelor or higher level degree programmes (Middleton, 1988). The lack of demand results in low student numbers and returns, in terms of fees revenues and government subsidies.

Collaboration between the two systems to provide pathways for VET graduates in progressing to HE are also not encouraged by government policies. This is especially evidenced in the expectation for HE institutions, especially those with Research University (RU) status, to be academically focused and research intensive (Ramli et al., 2013). Such expectations cause these universities to focus on operations and developments that boost research capacity and academic status. As such developments require students with strong academic backgrounds, it encourages these universities to only select and offer admission to students with strong academic backgrounds. In this regard, with their reputation of being less academically inclined, VET students are less likely to be considered for entry. The research intensive focus also drives these universities to develop and offer programmes that can contribute to the research growth and academic reputation of the institution (Ministry of Education, 2012c; Ministry of Higher Education, 2011a; Ramli et al., 2013). This may provide another explanation for the reluctance of these universities to offer VET programmes that are perceived to be more skills-focused and less academically intensive, thereby contributing little to the research and academic development of the universities.

In summary, the policies and operations of both VET and HE systems have resulted in a gap between the two systems, making any useful collaboration difficult. The gap impacts on students' mobility between the two systems, resulting in difficulties in the upward progression of VET students into HE. Students, therefore, face difficulties in progressing to HE due to:

- Lack of recognition of the VET students due to their VET or skills education background;
- Lack of recognition for the VET qualifications;
- Inconsistent objectives between VET and HE systems; and
- Inconsistent programmes between the VET and HE programmes.

Strategies for overcoming barriers

The Malaysian government is determined to make the country a knowledge nation by the year 2020 (Economic Planning Unit, 2006c, 2012, 2015a). As the country moves into a globalised market and achieves an advanced economic status, a knowledge workforce with advanced skills becomes essential. Not only does the workforce require the knowledge and skills to carry out the work, but also the advanced knowledge and skills to cope with the constantly advancing technologies and increasingly complicated business environment. The Malaysian government, having realised the importance of education, has been invested heavily to ensure the people are equipped with not only the basic education to survive but also higher level education and skills to excel. The strategies and policies implemented in education in Malaysia come in different forms; including developing and maintaining an efficient system to provide effective education, and ensuring education equality in the country so that every Malaysian can study to the highest level and realise their highest potential (Abdullah, 2012; Economic Planning Unit, 2010c; Malaysian Technical University Network (MTUN), 2015; Ministry of Education, 2015).

While recent policies and strategies are expected to benefit all students and encourage them towards achieving the highest level education possible, not all policies and strategies are relevant to VET-LSEG students. After careful review in this study, four major strategies have been identified as relevant to these students and associated with their opportunity to pursue HE:

- The provision of financial assistance;
- Creating awareness about HE;
- Improving VET, in term of programmes structure, VET image and VET system as a whole; and
- Developing progression pathways for VET graduates.

Each of these will be addressed in detail in the coming section.

Financial Assistance for HE

Providing financial assistance is one of the most commonly suggested strategies for encouraging students' participation in HE. The strategy is one that is especially recommended to motivate students from adverse financial backgrounds, and its implementation has shown positive outcomes in many countries (Terenzini, Cabrera, & Berna, 2001; Vedan, Flanagan, & Pérez, 2010). In Malaysia, financial assistance for HE appears in two major forms: scholarships, which require no repayment, and educational loans. The major provider of scholarships includes the Public Service Department (Jabatan Perkhidmatan Awam-JPA), Scholarship Division of the Ministry of Higher Education Malaysia, the State Government, The STAR Education Fund and The Malaysian Association of Private Colleges and Universities (MAPCU) (StudyMalaysia.com, 2015). While the major providers of education loans include the National Higher Education Fund Corporation (Perbadanan Tabung Pendidikan Tinggi Nasional-PTPTN), various governmental agencies like Majlis Amanah Rakyat (MARA) and the Social Security Organization (SOCSO), various non-governmental organizations like Koperasi Jayadiri Malaysian Berhad (KOJADI) and Tunku Abdul Rahman Foundation, as well as various banks and finance institutions (Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN), 1997; Performance Management and Delivery Unit, 2013).

Over the years, the availability of educational loans has made HE more attainable for students from lower income groups in Malaysia. Amongst all of the loans, the PTPTN is the most popular and far-reaching for Malaysian students, due to its less stringent requirements and availability to applicants regardless of ethnicity. According to PEMANDU (2013), as at December 2013, at least RM49.18 billion (approximately 18 billion AUD) had been awarded to approximately 2.18 million students to enable them to pursue HE in either public or private institutions within Malaysia. The government has also vowed its continual support of the PTPTN loans to ensure the continued support of Malaysians interested in HE (Ministry of Education, 2012b, 2014b).

Such accessible financial assistance does not seem to motivate VET-LSEG students to progress to HE, or improve their representation in HE. The persistent

underrepresentation of VET-LSEG students in HE despite the availability of financial assistance, raises the need for the financial assistance policies and the financial award system to be further investigated, especially in regards their effectiveness in reaching out to VET-LSEG students, and assisting them financially to attain HE.

Create awareness about HE

People's indifference towards HE is often associated with a lack of awareness about its relevance and significance. One measure that is recommended to address this issue is to provide information about the ways in which HE can improve quality of life and contribute to the country's ability to meet the challenges posed by a continually changing environment. As Malaysia moves towards achieving the status of a developed country and knowledge nation, an awareness of the significance of HE is especially important as this would encourage people to pursue higher levels of education, thereby enabling the country to generate a workforce with advanced knowledge and skills. In view of this, various measures have been taken to create an awareness of the importance of HE in the country, especially in conjunction with the implementation of the country's Education Blueprint introduced in 2013 and the national Transformation programme implemented in 2010.

Under the auspices of Malaysia's Education Blueprint and Transformation Programmes, various measures have been taken to create an awareness of the significance of education in order to boost students' participation and completion of primary, secondary and HE, especially the undergraduate level. One of the most common strategies implemented in VET institutions is an awareness campaign about HE and career development. Such campaigns are usually organised by the VET institutions themselves, for the purpose of providing information and counselling about education and career choices to both students and parents. The counselling is usually conducted by VET teachers or school counsellors while the dissemination of information about careers or education is conducted by invited speakers from various related industries and HE institutions. In addition, according to Zainal, Kamaruddin and Nathan (2009), some campaigns even provide information and guidance on how to make HE more attainable

in adverse situations, for example, how students can create their own savings with special saving schemes provided through government and financial institutions.

Awareness raising strategies implemented by government also extend to the provision of counselling and guidance about career and education development, to both students and their parents. The government (Ministry of Education, 2014b) requires that a counselling desk or office is set up in VET institution, managed by trained and experienced counsellors. Counselling services and appointments are also scheduled periodically to ensure students receive the required guidance in planning for their after-VET development.

In addition, HE institutions are also reported to have conducted educational tours around Malaysia, visiting secondary schools and similar institutions to promote HE studies, while the government encourages the organisation of education fairs to enable all HE institutions to set up counselling desks and provide information to the public (Arokiasamy & Ong, 2008; Ministry of Education, 2014b, 2015). Such education fairs are usually conducted annually, and on a large scale, with all HE institutions gathered under one roof in a public place such as a shopping mall or conference hall, to ensure accessibility. Fairs such as the STAR Education Fair and MAPCU Education Fair, provide an opportunity for students to receive counselling and to enable the government to promote the significance and relevance of HE.

The strategies discussed above have been implemented to ensure that students, their parents and family, as well as the community at large are made aware of the significance of, and the opportunities provided by HE. Such broad and increasing awareness is important not only in ensuring students' acknowledge the importance of HE but that they also live in an environment where it is emphasised and treasured. Such an environment is important in improving students' confidence, encouraging their positive attitude towards education and motivating their desire for HE (Jordan & Plank, 2000; Kirk et al., 2012).

Improving VET in Malaysia

The Malaysian government also recognises the importance of an effective VET system in producing quality education and qualifications. Over the years, the government has implemented various strategies to ensure the system is well developed and supported so that it provides effective education and training to Malaysian students. While the old strategies, such as those implemented under the National Industrial Training and Trade Certification Board and National Vocational Training Council and the National Skills Development Act (NASDA) 652, managed to successfully put the VET system on the map as part of the national education system, the new strategies under the new Education Blueprint (2013-2015) and Transformation Programme (2010), were implemented with mission to improve the system as a whole, raise the quality of VET programmes, improve the recognition of both VET students and VET certifications (Abdul-Hanid, 2011; Buletin Anjakan, 2015; Economic Planning Unit, 2010c).

Improving the VET school system

The original secondary VET school system (Sekolah Menengah Vokasional) in Malaysia, was part of the mainstream upper secondary school system which was developed to provide skills education and training to students who had progressed through the lower secondary school, especially those who completed Secondary School Level Three and Lower Secondary Assessment (Penilaian Menengah Rendah-PMR). This secondary VET school system specialised in providing skills-focused training, offering a wide range of specialty courses including automotive, electrical wiring, building construction, information technology, as well as office administration and management. The programmes took two years to complete and skills certificates, the Sijil Pelajaran Malaysia Vokasional (SPMV), were awarded to students upon successful completion of the whole programme.

Though the VET school system has always been a part of the mainstream education system in Malaysia, it has generally been perceived as second rate due to its vocational nature (Pang, 2010). Thus, the VET system itself, along with its programmes and the certificates it awards, received little recognition. This low recognition and the

perception that the VET system is inferior created a negative image of VET students themselves, and became a major barrier to students' progressing into HE in Malaysia. To counter the negative perceptions of the VET schools system and SPMV, a plan was developed and implemented under the recently announced Malaysia Education Blueprint (2013-2025) and government's Transformation Programme (2010) with purpose of restructuring and upgrading the existing VET school system into a sophisticated VET system producing higher level VET programmes.

According to Ministry of Education, the new transformation plan will provide the VET system a new and improved image. Under the plan, which commenced in 2012, all existing Secondary Vocational Schools (Sekolah Menengah Vokasional) were restructured and upgraded to Vocational Colleges (Kolej Vokasional) and all the existing two-years skills certificate programmes were restructured into four-year diploma programmes. Thus, students enrolled in the newly restructured programmes are provided with the opportunity to study a diploma programme rather than the short skills certificate programmes offered under the old system. Students who complete the restructured programmes are awarded with a diploma certificate compared with skills certificate under the old system (Ministry of Education, 2012a). The upgraded status of the institutions and the upgraded certification are expected to improve the recognition of students graduated through the system.

Improving the VET programmes

According to the National Trade Skills Standards (NTSS), National Occupational Skills Standard (NOSS) and National Dual Training System (NDTS), VET programmes on offer are well developed. However, their emphasis on the workplace and their skills-focused nature, has been criticised as resulting in the provision of simple programmes capable only of providing basic and lower-level education and training. These limitations were noted for improvement under the government's transformation strategy.

The major strategy under the Transformation Programme for improving VET programmes is the restructuring two-year skills certificate programmes into four-year vocational diploma programmes. Under the new vocational diploma structure,

commencing in 2014, the programmes contain a more condensed curriculum that covers more areas of study and enables more in-depth learning, especially in the theoretical aspects. Other than the technical subjects, the longer duration also allows extra units to be incorporated into the programme, such as employability skills subjects like language and communication skills, which contribute to a greater academic or non-skills element in the programme. The longer duration of the programme also allows On-Job-Training (OJT) to be incorporated into their study, which allows students to learn both the higher level theoretical knowledge and advanced practical skills in the real life environment.

According to the Economic Planning Unit (2010b) and Ministry of Education (2012b), the upgraded VET programmes are expected to improve the quality of the VET programmes and also the value of VET graduates. Under the upgraded programmes, not only can students graduate with higher level knowledge and more sophisticated skills, but can also graduate with a higher level qualification that help them to acquire both better job opportunities and more opportunities to progress to HE study. The effectiveness of the upgraded VET is yet to be proven, however, because the upgraded programmes were only implemented in 2014 and the first cohort of students will complete their studies in 2017 (a year after the completion of this study). All relevant stakeholders, including the government and the involved VET institutions, are still anticipating the outcomes, especially in terms of graduate quality and potential in obtaining better jobs or opportunities to study HE.

Improved recognition for VET graduates

The new transformation plan for VET also aims to improve the recognition of VET qualifications and therefore graduates. To date the skills-focused and less academic nature of VET programmes has resulted in the system receiving less recognition in Malaysia when compared with the mainstream academic education system (Pang et al., 2011; Suradin et al., 2010). This has resulted in a perception that the VET system is inferior and has impacted upon the VET students' opportunity to obtain better employment or pursue further HE study. In view of this, various measures have been put

into place to improve the recognition of VET, especially in upgrading the image of VET and creating more accreditation for the VET programmes and the VET certifications.

Three major strategies were implemented with the purpose of improving the recognition of VET in Malaysia. First, awareness campaigns have been organised, via advertisements, forums, exhibitions and other media, to inform the public and confirm the government's emphasis and recognition of VET. Such endorsement from the government is meant to provide VET with a positive image and reassure the public that VET is a recognised education and training system in Malaysia. Second, collaboration between VET and related industries and professional bodies has been encouraged and is being established in order to create better professional and industrial recognition for the VET programmes and certifications. Such recognition will not only help improve the value of VET certification but also the value of VET graduates, thereby contributing to their chances for future employment or admission to further education. Third, the government has started looking into creating various VET accreditation bodies to grant recognition and accreditation of the VET programmes and certification in Malaysia since 2014 (Economic Planning Unit, 2010c). The Board of Technologist Malaysia (MBOT) was suggested to the parliament proceeding in 2015 as such a body, and is expected to be approved and implemented by the end of 2016 (Rasul, Ashari, Azman, & Rauf, 2015). The MBOT is expected to act like the Board of Engineers Malaysia, which is an accrediting body, in order to endorse the VET certifications and lift the professional image of VET graduates. The accreditation is also expected to create better value for the vocational diploma in order to obtain more recognition from the academic, professional and the social world.

Developing Progression Pathways

Under the government's Transformation Programme 2010 and the Tenth Malaysia plan 2010-2015, new strategies have been implemented to ensure progression pathways are available for Malaysian students with VET backgrounds who want to progress to HE. These include encouraging VET institutions to establish Memorandum of Understanding (MOU) with HE institutions so that students from the VET institutions

can progress to their partner institutions for HE studies, as well as encouraging HE institutions to offer VET related HE programmes. Among all the strategies that have been implemented, the Malaysian Technical University Network (MTUN) project is the most relevant strategy to the progression needs of the VET-LSEG students.

The Malaysian Technical University Network was first introduced in 2000 and formally established in 2006. The network underwent a rebranding initiative during 2007 and was formally reintroduced again in 2015 (Malaysian Technical University Network (MTUN), 2015). The MTUN consists of four Malaysian government funded universities, including the University of Tun Hussein Onn Malaysia, University of Teknikal Malaysia Melaka, University of Malaysia Pahang, and University of Malaysia Perlis (UniMAP). According to the Tenth Malaysia Plan 2010-2015, the MTUN was established to offer HE, at bachelor degree level and above, to students who have graduated through the VET system, especially those from the public funded vocational colleges (Economic Planning Unit, 2009).

MTUN (2015) claimed that the skills and VET focused MTUN was established as a complementary system to the traditional academic focused HE system in Malaysia, through offering practical oriented and VET related HE programmes. This suggests that VET-LSEG students who experience problems finding the HE programmes under the traditional HE system can find a suitable HE programmes under the MTUN institutions. However, at the time of writing, the information on the MTUN websites seems to suggest otherwise. According to the information published on the MTUN webpage, there are only approximately twenty different bachelor degree programmes being offered through these MTUN institutions, and most of these programmes though VET related, are mostly technically oriented, such as Bachelor of Technology Management and Bachelor of Engineering Technology. The limited number of HE programmes being offered through these MTUN institutions raises concern about their capacity and effectiveness in meeting the progression needs of the VET-LSEG students that are potentially coming from at least 100 different subject areas, including office administration, insurance management and agricultural business (Ministry of Education, 2012e). Therefore, further investigation is required, especially in regards the MTUN's plan to accommodate more students with more varieties of training background.

Implications for the VET-LSEG students

The background in Chapter 1 highlighted three important points pertinent to the arguments articulated here. First, Malaysia needs HE in order to stay competitive, and to contribute to the country's economic and social growth. Second, various strategies and policies have been implemented by the government, to encourage and support Malaysians to attain HE qualifications. Third, despite the strategies that have been implemented and having benefited most Malaysians in achieving HE, the VET-LSEG students remain underrepresented in HE. The failure of such students in progressing to HE disadvantages them, particularly in regards their inability to obtain stable employment with a decent income that could help them in improving their socioeconomic status.

The literature review in this chapter highlights the possibility that though VET-LSEG students might hold strong aspirations for continuing to HE, appropriate opportunity and support may be lacking for them to do so. Six factors have been identified as contributing to their underrepresentation in HE relating to both the students' disadvantaged background and the flaws in the education system in Malaysia. The literature review suggests that as a result VET-LSEG students are deprived of the opportunity to progress to HE after completing their VET studies. This outcome violates Malaysia's education principle, which aims to promote fair access to education and vows to enable every Malaysian the opportunity to realise their highest potential through education, regardless of race and socioeconomic background (Kaos; Ministry of Education, 2012c). Though relevant strategies were implemented to help VET-LSEG students gain access to HE, and to attain HE qualifications, these students' persistent underrepresentation in HE raises questions with regards the effectiveness of these strategies.

This review of the literature and previous background study highlights the need to examine the factors or barriers preventing VET-LSEG students from progressing to HE. Such research will enable better understanding of the educational situation of these VET-LSEG students, in particular, the reasons they are not progressing to HE. A better

understanding of the issue will help identify the needs of these students so that more effective strategies can be developed to improve the participation of these VET-LSEG students in HE in Malaysia.

Chapter Summary

In this chapter, the literature review has indicated the presence of barriers preventing VET-LSEG students from progressing to HE, and highlighted six major factors contributing to these barriers; the low aspirations of the VET-LSEG students in pursuing HE, the financial factors caused by the students' financially disadvantaged background, the students adverse family background which discourages their desire to pursue HE, the students' low confidence in attaining HE, the negative social influence surrounding the students, and related cultural factors that cause negative effects on students' desire to attain HE. The literature review also raised questions about the effectiveness of the current education system in Malaysia, and the implemented policies, especially those aimed at helping and motivating VET-LSEG students to attain HE. These outcomes justify the purpose of this study, and provide useful guidance in designing and constructing the study, in order to collect relevant data that produces constructive results. The next chapter details the design of the study and the methodologies adopted in gathering and analysing data in the study.

Chapter 3 Methodology

This chapter describes the research methodology and specific methods and processes adopted for the gathering and analysing of data. This chapter begins with an overview of the research approach and the design of the study. This is followed by a description of the stages of research activities for the study, including ethical consideration, selection research instruments and respondents. This chapter then describes the procedures used for data collection and analysis, concluding with methodological problems encountered and in which they were managed.

Focus of the study

Anderson and Arsenault (2004) suggested that educational research is a ‘disciplined attempt’ to address problems (p. 6). The focus of this study was to investigate the barriers to HE study encountered by VET graduates from LSEG background (VET-LSEG) in Malaysia, and to provide recommendations aimed at overcoming any barriers in order to make HE more accessible to them. Four research questions were formulated to guide the investigations;

1. How do the barriers to HE affect VET-LSEG students in Malaysia?
2. What are the major contributing factors to the barriers encountered by the VET-LSEG students in Malaysia?
3. How can the barriers to progression be overcome so that HE is more accessible to VET-LSEG students? and
4. Who are the main stakeholders and what are their roles in contributing to the success of overcoming the barriers experienced by the VET-LSEG students in Malaysia?

In order to facilitate an in-depth investigation, a Mixed Methods Explanatory Sequential Design advocated by Creswell (2012) was adopted.

Mixed methods explanatory sequential design

As described in Creswell (2012), the *Mixed Methods Explanatory Sequential Design* consists of two distinctive phases (MMESD), namely the Quantitative Phase and the Qualitative Phase, is designed to collect quantitative and qualitative data separately and sequentially.

Design of Study

The MMESD study commenced with the Quantitative Phase focusing on the collection and analysis of quantitative data, followed by the Qualitative Phase focusing on collection and analysis of qualitative data. The quantitative outcomes derived through phase one provided a general understanding about the research issues and major factors for further investigations, while the qualitative outcomes derived in phase two provided not only a more defined picture about the research issues but also more in-depth understandings around the issues (see *Figure 3.1*).

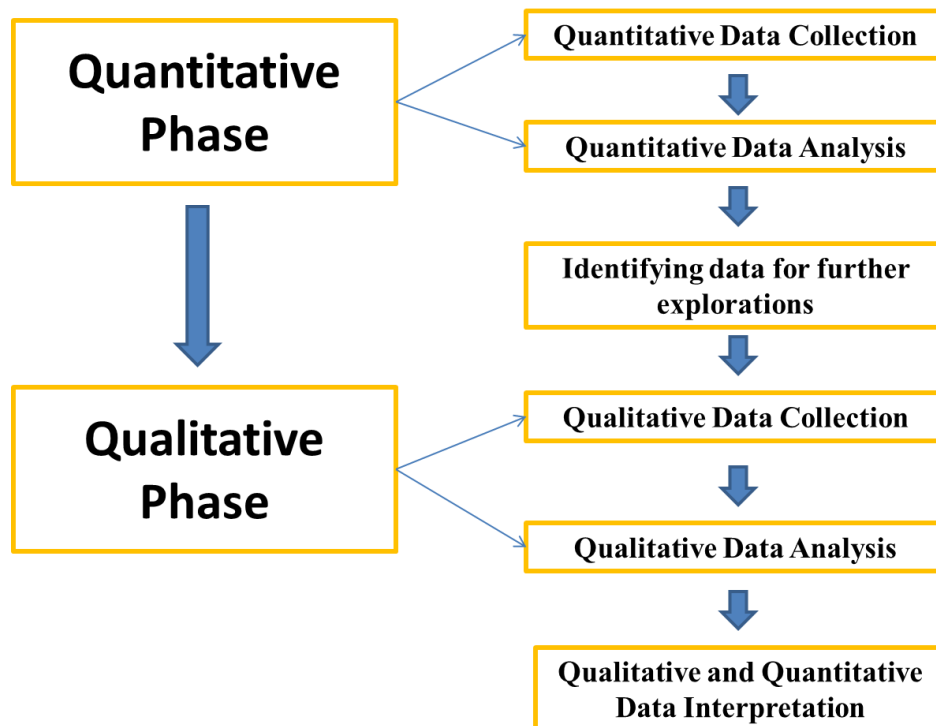


Figure 3.1 Design of Study

The MMESD was adopted in this study for three reasons. First, the rationale behind MMESD, which is to gain a general picture of the research issues for further in-depth investigation, fitted the purpose and context of this study (Ivankova, Creswell, & Stick, 2006). In this regard, the quantitative phase procedures were carried out to identify the barriers and the factors contributing to the barriers to the progression to HE study of VET-LSEG students, while the qualitative phase was conducted to further explore the causes of the barriers and each contributing factor, and the significance of their impacts on students' progression to HE. The phase one study also to scope the study by specifying the major contributing factors to the barriers, thereby providing a clear path for further exploration. Overall, this enabled costs and time savings in the resources (Wachira, 2015).

Second, the MMESD enabled a rich pool of data to be collected through multi-phase and multi-methods study, resulting in data triangulation across different types of data collected through different study instruments at different phases of the study (Cameron, 2009; Lisle, 2011). In this regard, not only the barrier and its contributing factors identified in phase one could be further defined and explored during phase two of the study, but the significance of the identified barriers and their contributing factors could also be validated and further explained through the analysis of the qualitative data collected through phase two of the study.

Third, as suggested by Creswell (2012), the MMESD enabled the researcher to build on the strengths of both the quantitative and qualitative data collected through different phases with different methods. In this regard, not only the qualitative data collected in phase two helped explaining and defining the barriers identified in phase one but also helped providing evidence to validate the significant impacts caused by the barriers identified. A wider exploration of the barriers encountered by VET-LSEG students in phase two, brought a different perspective to the issue that was useful in developing effective strategies aimed at overcoming them.

Research Instruments

In the MMESD, the quantitative data in Phase 1 were first collected and analysed, prior to the collection of the qualitative data. Phase 1 data were collected using questionnaires while the Phase 2 data were collected using structured interviews and case study.

Phase 1: Questionnaires

Phase 1 was designed purposively to seek an overall understanding of the barriers to HE encountered by VET-LSEG students in Malaysia and to identify the assistance required to help these students to overcome the barriers (Creswell, 2003).

Questionnaire for VET-LSEG students and CAs

This study intended to examine the issues from two different perspectives, the perspectives of the VET-LSEG students and the perspectives of the school leaders/chief administrators of VET institutions. Thus, two survey questionnaires were developed and administered, one for the VET-LSEG students (see Appendix 1) and the other for the school leaders of VET institutions (see Appendix 2). Both questionnaires adopted a similar design and identical contents, with both questionnaires comprising of ten sections developed through the five elements identified in literatures.

Although similar concepts and content were adopted in both questionnaires, the items and questions were worded differently, according to the background and role of the respondents. In this regard, in the questionnaires for VET-LSEG students, students were asked to respond as stakeholders that were directly affected by the issues, while in their questionnaires, school leaders were asked to respond as observers. For example, for item (a) under Discouraging Factors, students were asked if financial difficulties were a significant factor preventing them from pursuing HE, while school leaders were asked if financial difficulties were significant factor preventing VET-LSEG students from pursuing HE.

The two survey questionnaires were designed to enable the research problems to be examined from different perspectives, and the data collected from different groups of respondents also enabled data comparison and data vilification (Babbie, 2008).

Contents of Questionnaires

The content of the questionnaires was developed with reference to the relevant literature and published reports revised during the literature review (see Chapter 2). In this regard, five primary elements were identified for examination using questionnaires:

- Background of VET-LSEG students, especially in identifying the financial and education background of the family members. This is important in identifying and cross checking the socioeconomic status of the respondents given the purpose of this study was targeting on progressing of VET-LSEG students.
- Confidence of VET-LSEG students, especially in terms of knowledge, skills and qualifications acquired through VET studies.
- Students' aspirations and future plans, especially in assessing what VET-LSEG students intend and plan to do after completing their VET studies.
- Major factors preventing VET-LSEG students from progressing to HE after completing their VET studies.
- Major assistance required to help VET-LSEG students in acquiring HE.

A modified version of *Flow Chart Technique* advocated in Cohen and Manion (1985) was adopted in determining the inclusion and sequencing of items in the questionnaires, in order to ensure not only a logical flow of the items but also the responses collected through the questionnaires. A sample flowchart is illustrated in *Figure 3.2*.

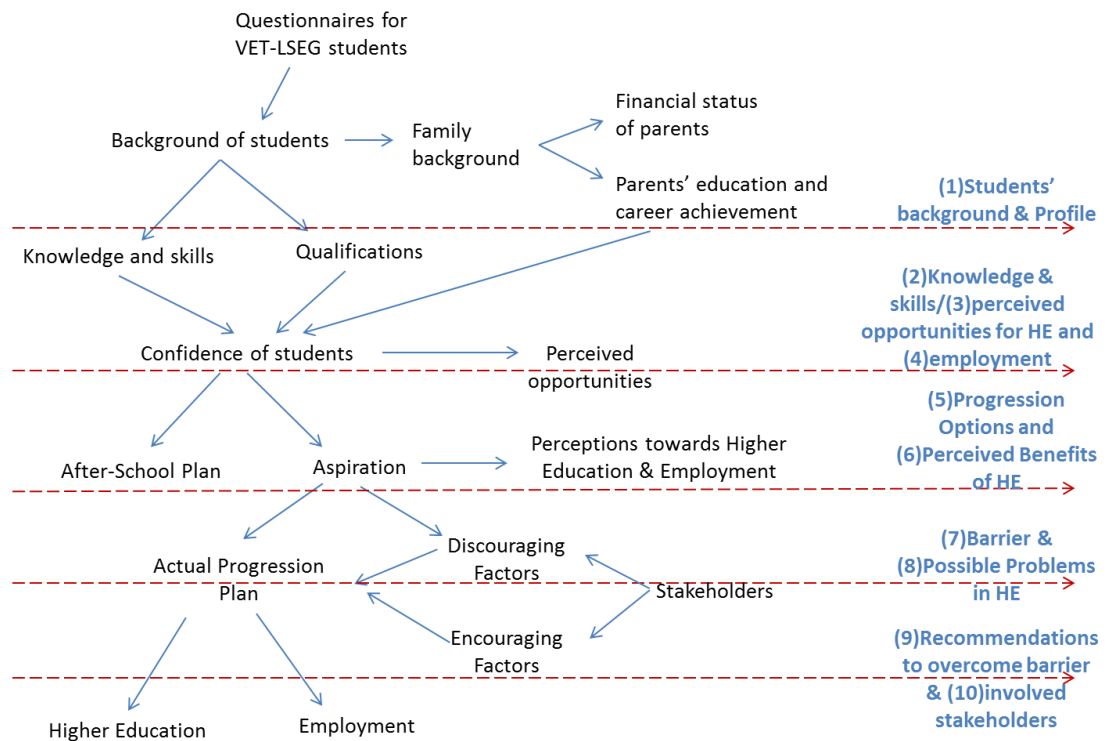


Figure 3.2 Flow Chart for Questionnaires Design

Ten sections or focus areas were developed according to the five identified elements and included in the questionnaires (see Figure 3.2). The details of the ten focus areas are as follows:

- *Background and profile* of students at Vocational College comprised of 15 multiple choice questions to examine the family and education background of VET-LSEG students.
- *Knowledge and Skills* of vocational students comprised of 6 Likert-Scale items to examine the knowledge and skills perceived to have been obtained by VET-LSEG students through VET studies.
- *Employment opportunity* comprised of seven Likert-Scale items to examine the employment opportunities potentially obtained by VET-LSEG students after completing VET studies.
- *Progression options* comprised of 9 Likert-Scale items to examine the options and preferences available for VET-LSEG students after completing VET studies.

- *Benefits of HE* comprised of eight items to examine students' perceptions and aspirations towards HE.
- *Discouraging factors* comprised of 16 Likert-Scale items to examine the factors contributing to barriers to HE encountered by VET-LSEG students.
- *Encouraging factors* comprised of 17 Likert-Scale items to examine the factors that could encourage and assist VET-LSEG students in attaining HE after completing VET studies.
- *Possible problems* encountered by vocational students in HE comprised of 8 Likert-Scale items to examine problems VET-LSEG students anticipated they might encounter while pursuing HE studies.
- *Recommendations* comprised of 5 Likert-Scale items to examine strategies that could help VET-LSEG students to overcome barriers to HE.
- *Stakeholders and Responsibilities* comprised of 22 Likert-Scale items to examine roles of five major stakeholders (government, VET institutions, HE institutions, industrial partners and the VET-LSEG students) in order to overcome barriers to HE encountered by VET-LSEG students.

Under the section of 'Background and profile of VET-LSEG students', closed format multiple choice questions were used and respondents provided responses through selecting one answer from the choice of answers provided (Burgess, 2001). For example, Item 1 under Questionnaire for VET-LSEG students, respondents were asked about how many siblings they had in their family and the listed answer choice included (A) I am the only child, (B) Two, (C) Three, (D) Four, and (E) Five or more.

The remaining nine sections were also closed format five-point Likert-Scale items where respondents provided responses using five-point Likert-scale from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree (Leung, 2001). One open-ended question was also included in each section to invite respondents to provide further opinions about the respective issues, especially opinions that were not already stated as items in the respective section (Babbie, 2008). For example, Item (B) under Encouraging Factors section, respondents were asked to comment, *'Please write*

below other factors that will encourage and assist you to continue your study after completing your training or courses here’.

Phase 2: Semi-Structured Interview

Anderson and Arsenault (2004) have suggested that the “Interviewing for research purpose must follow a plan related to the objectives one wants to achieve in the data collection” (p. 183). Given the qualitative phase in the MMESD design of this study was constructed to further explore and refine the outcomes of Phase 1, semi-structured interviews with open-ended questions were adopted to enable the researcher to pre-plan the discussion topics, with a specific focus on the data collected through the qualitative phase, to meet the needs of the study (Creswell, 2012; Laforest, 2009).

The researcher also anticipated that some respondents, especially the VET-LSEG students, would only be available for one interview due to their geographic location and the conditions set by their respective VET institutions, thus, semi-structured interview, with pre-planned questions, helped ensure that time was used efficiently so that relevant data was able to be collected during the interview session (Bernard, 2006). In addition, the semi-structured interview, though guided by pre-planned questions also enabled the respondents to discuss the issues freely through the use of open-ended questions. Thus, a rich pool of data was collected to ensure wide and in-depth exploration of the issues.

Interview Schedules

Five interview schedules were developed for the five groups of respondents that consisted of VET-LSEG students (Appendix 3A), chief administrators or school leaders from VET institutions (Appendix 3B), representatives from HE institutions with progression pathways (Appendix 3C), representatives from HE institutions without progression pathways (Appendix 3D), and representatives from MOE in Malaysia (Appendix 3E). Each interview schedule was constructed with a different set of questions, which were constructed according to the background and respective roles of the respondent group played in contributing to answering the research questions.

Due to the limited time available to the researcher for data collection and analysis, and the possibility that access to technology would be limited during the field work, especially in remote areas in Malaysia, a two-stage process in constructing the interview schedule was introduced to the MMESD design. Stage one was carried out before the completion of quantitative data collection and analysis. During this stage, a preliminary set of open-ended interview questions was first developed for each respondent groups based on the five primary elements identified through the literature review, and used for the construction of the questionnaires.

Stage-two was carried out after the completion of Phase 1 study, where both the collection and analysis of quantitative data were completed. During stage-two, each set of drafted interview questions were refined and adjusted as a consequence of the quantitative outcomes. Thus, instead of developing the interview schedules after the completion of the collection and analysis of quantitative data as suggested MMESD design, the two-stage process enabled the researcher to save time by first developing a preliminary list of questions that targeted the anticipated outcomes, and then refined the questions based on the outcomes derived through the quantitative phase. The researcher found the two-stage process helpful as not only did the process enable time to be saved but it also allowed the outcomes from the quantitative process to be included in the interview schedules.

Phase 2: Case Study

A case study was conducted to complement and further explore the data collected through questionnaires and semi-structured interviews. The case study was inspired by the reluctance of HE institutions to admit VET students into HE studies, and the lack of capacity of HE institutions to offer effective VET related HE programmes. The primary objectives of this case study was to elicit data that would encourage more HE institutions to offer VET related HE programmes and to admit VET-LSEG students to HE studies. The case study was also useful for examining the assistance required by VET-LSEG students to overcome the barriers to HE and any strategies that were deemed effective in this regard. In order to achieve these aims, an exploratory and descriptive

approach with use of a *Single Case Study* was conducted on a HE institution which has successfully offered VET related progression pathways and admitted VET-LSEG students for HE studies in Malaysia for at least 15 years.

The Single Case Study was adopted for three major reasons. First, the selected institution is one of the few institutions offering VET related progression pathways into HE for VET-LSEG students in Malaysia, and this uniqueness identified it as a single case study (Yin, 2003). Second, the explanatory and descriptive approach of a case study meets the objective of the study, which is to examine the structure and operations of the selected institution, in order to explore and identify the internal factors and external elements that enable it to be successful in the VET to HE area (Babbie, 2008). Third, the single case study approach enabled the researcher to undertake a more focused and in-depth exploration on the selected institution without exhausting the limited resources available in the study (Creswell, 2012; Hsieh, 2004).

Investigation Schedule

Barbie (2008) suggested that an effective case study is expected to provide not only an idiographic but also a nomothetic view about the subject under study, so that the study derives not only new ideas about the subject under study but also generalizable ideas that can be promoted for adoption by others. In order to achieve the suggested effectiveness in this study, a three-stage investigation design was developed to guide the studies. Stage one involved a descriptive study of the internal elements contributing to the success of UML, including its organization structure and primary operations in order to grasp a general understanding about the institutions (Yin, 2003). Stage two focused on examining other factors that contributed to UML's strengths and advantages, especially in its capacity in becoming a successful institution offering relevant progression pathways to VET-LSEG students in Malaysia. Stage three aimed to identify significant challenges encountered by the institution in assisting VET-LSEG students to attain HE qualifications (see Figure 3.3).

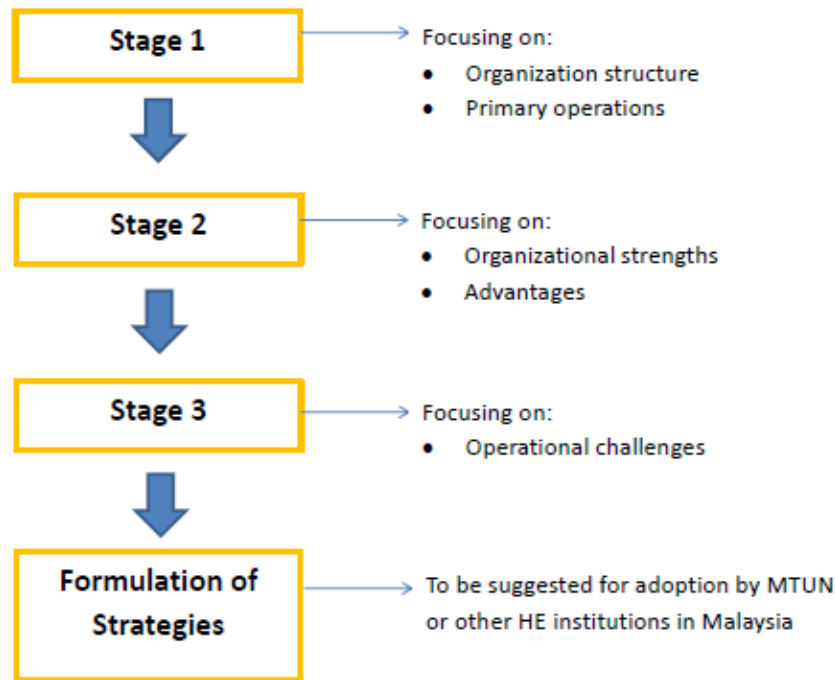


Figure 3.3 Case Study Design

An Investigation Schedule based on this Three-Stage Investigation was developed to guide the investigations (see Appendix 4). On-site observations, document reviews and interviews were used for data collection. The Investigation Schedule helped organize the study and deliver outcomes that were very useful to the formulation of strategies that could help other HE institutions in Malaysia to offer VET related HE programmes and admit VET-LSEG students for HE studies. The case study also contributed to the formulation of strategies that could help VET-LSEG students to overcome barriers to HE in Malaysia.

It is important to note that direct quotes from interviews and references to documents or sites reviewed in the case study were deliberately omitted in order to protect the privacy and confidentiality of the institution under study. This was a request made by the institution involved before permission was given to conduct the study.

Translation of research instruments

The questionnaires and interview schedules were first developed by the researcher in the English language, and later translated into Malaysian Language as this is the

native language and the formal language used in Malaysian schools and VET institutions. Both instruments were then translated into Malaysian Language by the researcher and edited by a qualified translator from Malaysia. Simple language was also adopted not only in writing the questions and the instructions used in the questionnaires and interviews, but also during verbal discussions with respondents to ensure that respondents understood the questions and provided responses comfortably in the language with which they were familiar.

In a similar way, the Introduction Letter, Information Sheets and Consent Forms for students and formal guardians were first developed in the English language and later translated into the Malaysian language by the researcher and edited by qualified translator from Malaysia. Translation was not necessary for school leaders/chief administrators from vocational colleges, and representatives from HE institutions and MOE, as English is the formal language used, spoken and written, in day to day office operations.

Sampling

This study adopted purposive sampling, or purposeful sampling as described in Creswell (2012), where respondents are selected according to their specific background and capacity to provide data which is relevant and suitable for the objective of the study (Babbie, 2008). Given the purpose of this study was to examine the barriers to HE encountered by the VET-LSEG students and to suggest strategies to overcome these barriers, this study was interested in the experiences of both the VET-LSEG students directly affected by the issues, and other stakeholders that were directly or indirectly involved in making decision about the issues (Anderson & Arsenault, 2004).

Thus, five major categories of respondent were identified: VET-LSEG students, chief administrators or school leaders from Malaysian VET institutions, chief administrators or school leaders from HE institution which provided progression pathways for VET-LSEG students in Malaysia, chief administrators or school leaders from HE institution which did not provide progression pathways for VET-LSEG students in Malaysia, and representatives holding leadership positions at Malaysian

MOE. The selection process and the justifications of the selections are described in the following section.

Sampling for the quantitative phase

As mentioned earlier, two survey questionnaires were developed purposively for two different groups of respondents, namely the chief administrators from vocational colleges in Malaysia and the VET-LSEG students from Vocational Colleges in Malaysia. The students and chief administrators were selected from Vocational Colleges because these were the institutions operate under the public school system which enrolls students directly from the secondary school system. The fact that these colleges offer fully funded programmes, with free food and accommodation, makes these institutions the most popular choice among the students from LSEG backgrounds, especially those who may have problems coping with the academic studies in the traditional secondary school system (Abdul-Hanid, 2011; Ministry of Education, 2012a; Pang, 2010). The selection process and justification of each category of respondents are presented in the following section.

Chief Administrators (CA): Questionnaires A

Chief Administrators (CA) were selected from the whole population of eighty-eight (88) public funded Vocational Colleges in Malaysia. The CAs were purposively selected because of their leadership role and responsibility at the VET vocational college which provided them with a good understanding of the background and achievements of the VET-LSEG students at the respective colleges, the learning and teaching strategies they adopt, the legislative guidelines and policies, the collaborations between VC and relevant stakeholders, and the current and future development of the respective VC.

VET-LSEG students: Questionnaires B

VET-LSEG students who were studying the senior year (year 3) of a vocational diploma at the public funded vocational colleges at the point of study were recruited. Taken into consideration of the limited time and resources allowable for the study, only

six vocational colleges were selected for the recruitment of student respondents. The six vocational colleges were purposively selected from three different states or districts; Sabah, Terengganu and Klang Valley, which established as the states and regions with highest poverty rates as established in the background study (see Chapter 1) under the header of ‘The LSEG in Malaysia’. Sabah and Terengganu were selected as research sites because these were the states or districts with the highest and second highest poverty rate in Malaysia respectively, while Klang Valley, which included Kuala Lumpur and Petaling Jaya, was selected because it was the regions with most number of vocational colleges and high rate of urban poverty (Chamhuri & Yusof, 1997; Hooi & Kala, 2008; Nair & Sagar, 2015; Zainal, Kaur, Ahmad, & Khalili, 2012).

Out of each state, two vocational colleges were again purposively selected from areas that show high poverty rates according to the annual reports of the Department of Statistics Malaysia. The number of respondents was restricted by the limited time and funding as well as the population of students that met the selection criteria at the selected college. Thus, 20 students from each college were purposively selected based on the selection criteria (see Appendix 5), with assistance of the chief administrator of the respective institution. In order to ensure students selected came from LSEG background, the chief administrators who assisted in selecting candidates were informed to select or recommend students from family with household incomes not more than RM2500 per month. This criteria was drafted in reference to the LSEGs’ household incomes established in the background study (see Chapter 1) under the header of ‘The LSEG in Malaysia’.

Recruitment procedures

The recruitment procedures of the CAs and VET-LSEG students for the quantitative survey questionnaires are detailed in *Table 3.1*.

Table 3.1 Recruitment Procedures of Interview Respondents

Category	Participant Group	Recruitment Procedures
Phase I- Questionnaire A	Seventeen (17) consented CAs,	1. Each CA or principal was recruited through invitation via email or postal

Category	Participant Group	Recruitment Procedures
	represented 19% response rate, signed the Consent form, completed the questionnaires and returned the completed questionnaires to researcher via postal mail.	<p>mail.</p> <ol style="list-style-type: none"> 2. Invitation sent via postal mail consisted of: <ol style="list-style-type: none"> i) Introduction Letter (Appendix 6A) ii) EPU Ethics Approval Letter (Appendix 10) iii) Information Sheet (Appendix 7A) iv) Consent Form (Appendix 8A) v) A printed copy of Questionnaire (Appendix 2) vi) Envelop with returned postage and address 3. For invitation sent via email, the invitation sent consisted of: <ol style="list-style-type: none"> i. Soft copy of Introduction Letter ii. Scanned copy of EPU Ethics Approval Letter (Appendix 10). iii. Soft copy of Information Sheet iv. Consent Form v. Soft-copy Questionnaires in Microsoft Word format 4. All respondents completed and returned the questionnaires via postal mail. 5. No participants completed or returned the questionnaires via Qualtrix-Platform.
Phase I- Questionnaire B	Total of 120 VET-LSEG students were recruited, with 20 students from each of 6 vocational colleges selected from Sabah, Terengganu and Klang Valley. The 120 student respondents represented 100% response rate.	<ol style="list-style-type: none"> 1. CA or principal of the selected vocational colleges were first approached by researcher by telephone call or face-to-face appointment to: <ol style="list-style-type: none"> i) Introduce the researcher. ii) Explain the purpose of the study. iii) To explain the participation of student respondents in the study. iv) To clarify the selection criteria of student respondents. v) To get permission from respective vocational college to involve

Category	Participant Group	Recruitment Procedures
		<p>students in the study.</p> <ol style="list-style-type: none"> 2. List of Selection Criteria (Appendix 5) were then forwarded, via mail or email, to CA for the selection of student respondent in each respective vocational college. 3. Once the suitable student respondents of the respective school were identified, the Introduction Letter (6B), Information Sheet (Appendix 7B), Consent Form (Appendix 8B) and EPU Ethics Approval Letter were forwarded to the identified adult students (18 years old or above) through assistance of CA of the respective college. 4. In cases where vocational students were younger than 18 years old, Introduction Letter (Appendix 6C), Information Sheet (Appendix 7C), Consent Form (Appendix 8C) and EPU Ethics Approval Letter were forwarded to parents or guardian of the selected respondents with assistance of the CA of the respective vocational college. 5. Consent of student respondents was given through signing the Consent Form, either by the respective adult students or formal guardian of the respective young students. 6. In case where students younger than 18 years old are selected, consent was sought from both the students and the respective formal guardians. Formal guardians gave consent through signing and returning the Consent Form as per Appendix 8C. 7. For student respondents younger than 18 years old, once consent was given by the respective formal guardian, the

Category	Participant Group	Recruitment Procedures
		<p>respective student respondents were provided with an Introduction Letter (Appendix 6), Information Sheet (Appendix 7B), Consent Form (Appendix 8B) and EPU approval letter (Appendix 10) to seek consent personally from the student respondents. Students gave consent by signing and returning the consent form to the respective CA.</p> <p>8. The signed Consent Forms were collected with help of the Chief Administrator of the respondents' vocational college.</p>

Sampling for the qualitative phase

Two sampling processes were involved in the Qualitative phase; one for the semi-structured interview and the other for the case study.

Semi-Structured Interview

A total of eighteen participants were purposively selected and recruited for Phase II face-to-face semi-structured interviews. The possible participants were categorised into five major categories according to their background and respective role played related to the research problem. The five categories of respondents consisted of:

- CAs from vocational colleges
- VET-LSEG students
- CAs from HE institutions that offered progression pathways for VET-LSEG students
- CAs from HE institutions that had not offered progression pathways for VET-LSEG students, and
- Representatives from MOE Malaysia

Selection process and recruitment procedures

The details of these respondents and the recruitment process as well as the justification of recruitment are presented in *Table 3.2*.

Table 3.2 Recruitment Process and Sample Descriptions

Category	Selection process and justification	Recruitment process
Category A-Six (6) Chief Administrators (CA) from six Vocational Colleges purposively selected from Sabah, Terengganu and Klang Valley. One(1) CA from each selected vocational college was recruited for the Interview.	<ol style="list-style-type: none"> 1. CAs selected were person in-charge of student and programme administration who were knowledgeable about the students, the respective college and the education systems, including the education policies and development strategies, the student background, operation system, programme administration, effectiveness of learning and teaching in the college. 2. Six (6) CAs were selected due to limited time and funding provided for this study. However, each respondent was purposively selected according to the relevant job responsibilities and roles that equipped them with capability to provide useful and relevant data. 	<ol style="list-style-type: none"> 1. Introduction letter (Appendix 6D), Information Sheet (Appendix 7D) and EPU Ethics Approval Letter (Appendix 6) were first send via post or email to CA or principals of the selected vocational colleges to: <ol style="list-style-type: none"> i) Introduce the researcher. ii) Explain the purpose of the study. iii) To extend invitation and to explain the purpose of inviting the respondent into the study. iv) The general discussion areas to be covered during interview. 2. Each selected CA was then followed-up with telephone calls to confirm participation. 3. Once participation was confirmed, the Consent Form (Appendix 8D) was sent to respondent, followed by follow-up call to finalise the respondent participation and to make appointment for interview.
Category B-Twelve (12)	<ol style="list-style-type: none"> 1. The student respondents were selected from the same 	<ol style="list-style-type: none"> 1. The student respondents were selected from the same

Category	Selection process and justification	Recruitment process
VET students from LSEG background from six Vocational Colleges selected from Sabah, Terengganu and Klang Valley (similar to Group A). Two (2) from each vocational college.	<p>vocational colleges where Phase 1 Category B questionnaires were conducted. Students selected were from LSEG backgrounds and in the third year of the vocational diploma programme during the time of study.</p> <ol style="list-style-type: none"> Students from senior year with LSEG background were selected due to their ability to provide useful feedback from student's perspective on the barriers to HE, assistances required to overcome the barriers and the students' expectations from HE and their readiness to progress for HE. Six respondents were recruited due to limited time and funding provided for this study. 	<p>vocational colleges where Phase 1 Category B questionnaires were conducted.</p> <ol style="list-style-type: none"> Students were recruited through invitation attached with the Questionnaires distributed during Phase 1 Category B survey. Students volunteered participation through replying to the attached invitation. Suitable candidates were then purposively selected according to the selection criteria described in Appendix 5. Mechanical Simple Random Sample (SRS) was adopted in selecting respondents in cases where more than two student volunteered for interview. Only students aged 18 were recruited for interview. Volunteered students were provided Introduction Letter (Appendix 6E), Information Sheet (Appendix 7E) and Consent Form (8D). Signed Consent Forms were collected before interviews were conducted.
Category C- Two (2) Chief Administrators (CA) or school leaders from one HE	<ol style="list-style-type: none"> Two faculties with the highest intake of vocational graduates for higher level learning were purposively selected. One CA or school leader of VET progression 	<ol style="list-style-type: none"> Introduction letter (6G), Information Sheet (Appendix 7F) and EPU Ethics Approval Letter were first sent via post or email to CA or school leader of the

Category	Selection process and justification	Recruitment process
institution in Malaysia which offered progression pathways for students with skills or VET background, including the VET-LSEG students during time of study.	<p>from each of the faculties was approached via invitation (Introduction Letter sent via email or postal mail).</p> <p>2. These CAs or school leaders were approached due to their leadership role in the respective institution which equipped them with good understanding about education policies, programmes offered, students' related information, school operations and strategies.</p> <p>3. One HE institution was approached due to limited number of institutions providing progression for vocational students in Malaysia.</p>	<p>selected institution to:</p> <p>i) Introduce the researcher.</p> <p>ii) Explain the purpose of the study.</p> <p>iii) To extend invitation and to explain the purpose of inviting the respondent into the study.</p> <p>iv) The general discussion areas to be covered during interview.</p> <p>2. Each participant was followed-up with telephone calls to confirm participation, and to provide further clarification about the study if needed.</p> <p>3. Once participation was confirmed, the Consent Form (Appendix 8D) was sent to respondent, followed by follow-up call to finalise participation of the respondent and to make an appointment for interview.</p>
Category D- Two (2) CAs or school leaders from two HE institutions in Malaysia that had not provided progression pathways for students with skills or VET background,	<p>1. One CA or school leader from each HE institution was approached and recruited through invitation sent via email or postal mail.</p> <p>2. CAs or school leaders were selected due to their leadership role that provided them with good knowledge about education policies, programmes offered, students' related information, school operations and</p>	<p>1. Introduction letter Appendix 6H), Information Sheet (Appendix 7F) and EPU Ethics Approval Letter were sent via post or email to Registrar to:</p> <p>i) Introduce the researcher.</p> <p>ii) Explain the purpose of the study.</p> <p>iii) To extend invitation and to explain the purpose of inviting the respondent into the</p>

Category	Selection process and justification	Recruitment process
including the VET-LSEG students during the time of study.	<p>strategies.</p> <ol style="list-style-type: none"> 3. The limited time and funding limited the number of respondents and number of institutions approached for this category. 4. The two institutions were purposively selected based on similar courses offered as Institution in Category C, for easier and more feasible comparison. 	<p>study.</p> <ol style="list-style-type: none"> iv) The general discussion areas to be covered during interview. 2. Each participant was followed-up with via telephone calls to confirm participation, and to provide further clarification about the study if needed. 3. Once participation was confirmed, Consent Form (Appendix 8D) was sent to respondent. 4. A follow-up call was made to finalise the respondent participation and to make appointment for interview.
Category E-Two (2) Representatives from Ministry of Higher Education (MOHE)-Division of Higher Education and Division of Technical and Vocational Education	<ol style="list-style-type: none"> 1. One representative from MOHE and one representative from MOE-Division of Technical and Vocational Education were approached and recruited for interview. 2. The representatives approached held leadership role in the respective department in-charge of administrating the developments and monitoring the operations of HE and VET systems in the country. 3. They were recruited due to their leadership role which equipped them with good knowledge about current practices and performances 	<ol style="list-style-type: none"> 1. Introduction letter (Appendix 6), Information Sheet (Appendix 7G) and EPU Ethics Approval Letter will first send via post or email to Director of the Ministry of Higher Education to: <ol style="list-style-type: none"> i) Introduce the researcher. ii) Explain the purpose of the study. iii) Request for their recommendation of a representative to participate in the study. Selection criteria were attached as guideline for suitable participants to be selected by the director of MOHE.

Category	Selection process and justification	Recruitment process
	of the vocational system and HE system, the policies and guidelines as well as the development directions of both VET and HE systems in the country.	<p>iv) The general discussion areas to be covered during interview.</p> <ol style="list-style-type: none"> 2. Once suitable representatives were recommended by the MOHE director, the recommended participants were followed-up with telephone calls to confirm participation, and to provide further clarification about the study if needed. 3. Once participation was confirmed, the Consent Form (Appendix 8D) was sent to respondent. 4. A follow-up call was made to finalise participation and to make appointment for interview.

Case Study

One institute, referred to as UML in this study to protect the identity of the institution, was purposively selected for the case study. UML is a multi-campus Malaysian HE institution established under the Malaysian Education Act and accredited by Malaysia Ministry of Education. UML was selected due to its successful experience in offering progression pathways to VET-LSEG students despite of the existing barriers and restrictions presented in Malaysia.

The multi-branch campus background of UML and its complicated operation made it costly and time consuming to conduct an in-depth and thorough study, especially across all fourteen branch campuses. In view of the restricted time and finances allowable to this case study, only one branch-campus will be adopted for further examination. Since all branch campuses adopt similar organizational aims and operational procedures, and observe similar standards and regulations, the evidence

collected through the selected branch campus was assumed to be representative of the other thirteen branch campuses under UML.

Selection procedures for focused branch campus-UMET

The focused branch campus selected for further examination was randomly picked from the branch campuses incorporated under UML. A mechanical Simple Random Sample (SRS) or lottery method was adopted in selecting the focused branch campus. The process involved:

- i. Assigning each of the fourteen campuses a unique number.
- ii. Writing each number assigned to the campus on a separate tag.
- iii. Placing all the tags into a bowl and mixing thoroughly so that each number has an equal chance to be picked out.
- iv. Picking out a tag without looking into the bowl.
- v. The branch-campus bearing the number tag picked from the bowl was then used as a focus branch campus for this study.

In order to protect confidentiality, the selected branch-campus is referred as UMET in this study.

Recruitment procedures

An Introduction Letter (Appendix 6I), Information Sheet (7H) and Consent Form (8E) were sent to the Administrative Office of the UMET. The case study was conducted after the consent form, signed by the Head for Research and Innovation, was received back from UMET.

Though no restrictions or boundaries were set by the researchers on who to talk to within UMET, three major groups of respondents were targeted specifically for data collection. The first group of respondents were the administrative and management employees working in the departments relevant to the offering of progression pathways to VET-LSEG students, including those who had direct or indirect involvement in operations and decision making in regards these pathways. The second group of respondents were the existing LSEG students who had been admitted based on their

VET qualification to study a bachelor degree level programme at UMET. Whilst the third group were the UMET lecturers and counsellors that had experience teaching and counselling students from VET-LSEG backgrounds.

The administrative and management employees were targeted due to their job functions that enabled them to provide relevant information especially in regards of the execution of current policies, and the institution's capacity to, and challenges in providing progression pathways to VET-LSEG students. In addition, the professional knowledge and work experience of these employees was useful in directing the researcher to relevant sources of documentation and second source data for analysis.

The VET-LSEG students were targeted to provide information about their backgrounds and educational experience, particularly with regards to the challenges they had in applying for admission and in coping with HE studies. The lecturers and counsellors at UMET were approached due to their knowledge about both the performances of VET-LSEG students, and the assistance they required to cope with their studies. Though it was also the intention of the investigator to talk to the parents of VET-LSEG students, this could not be arranged due to confidentiality issues raised by UMET.

Ethical considerations

Ethical approval was required in this study due to the involvement of human participants. Ethics approval was granted by the Northern Tasmania Social Sciences Human Research Ethics Committee (Approval No H10703 – see Appendix 9) at the University of Tasmania. As the participants were Malaysians residing in Malaysia, a second ethics approval was requested in order to fulfil the ethics requirements in Malaysia. Ethics approval was granted by the Research Promotion and Co-Ordination Committee, Economic Planning Unit Malaysia before the data collection (see Appendix 10).

The primary consideration in both ethics applications was the assurance of confidentiality and anonymity of the participants and the institutions involved. In this regard, the potential participants were informed that their identity and involvement

would remain confidential and that no data collected would directly or indirectly identify them so their anonymity was assured. Potential VET-LSEG students, chief administrator respondents from VET institutions and representatives from HE institutions were also provided with assurance that no data collected would directly or indirectly identify their respective institutions. In addition, respondents were also informed about their freedom and right to withdraw from the study at any time. Up to the time of the writing-up of the study, no ethical concerns had been reported by any individual respondents or institutions participated in the study.

Protecting Confidentiality

The consent forms were stored in locked cabinet and accessible only by the researchers of this study. Respondents were not required to print or write their name on the questionnaires, hence the completed questionnaires were not identifiable to the respective respondents. The data extracted from questionnaires were transcribed into the Microsoft Excel programme, and the data filed and stored in this way are not traceable or identifiable to any individual respondent.

Interviews were audio-taped using MP3 with the respondent's permission. The audio-recording was necessary as it helped minimizing chances of recording the information wrongly. Only information received to answer the research questions and to achieve the research aim was recorded. The following measures were taken to ensure the information recorded was accessible only by the researchers of this study and none of the information recorded could be traced back to any individual respondent:

1. All hard copy data documents and files, such as questionnaires completed by the respondents and printed interview transcripts and signed consent forms, were locked in an allocated cabinet in the research office and only the researchers and student investigator of this study had access.
2. All soft copy data files, such as audio interview files, interview transcripts, case study reports and any electronic correspondence with respondents or institutions, were saved on the student investigator's computer which was password protected.

3. Information which directly identified any respondents was not filed or kept with researchers. Every respondent was identified using a coding system which was designed especially for this study. For example, chief administrator 1 from college 1 recruited for the completion of a questionnaire was coded as C1Q1, VET student 1 from college 1 as C1S1.
4. The name of respondents and institutions involved in the study have not been mentioned or referred to in anyway in this study.

The purpose of the case study was to conduct a thorough and in-depth study on the institution, but respecting the request to protect the identity of both the institution and the case study participants was also a major responsibility of this case study. Thus, upon request of the institution, neither the name of the institution or participants have been revealed in this study. Information and documentation that were deemed politically sensitive by the institution were not be directly critiqued and revealed. Finally, any information which directly or indirectly referred to, or revealed the identity of the institution or participants was encrypted and referred to using codes and/or acronyms, such as the name of the institution was coded as UML, and the focused branch as UMET.

Data Gathering Process

Data in this study were collected through two phases of study, namely the quantitative phase (Phase 1) and qualitative phase (Phase 2). In Phase 1, data were collected using questionnaires, whilst in Phase 2, data were collected using semi-structured interviews and the case study.

Gathering of Questionnaires Data

The questionnaires were designed specifically to collect data on ten focus areas that included:

- Family and financial background of VET-LSEG students.

- Knowledge and Skills acquired by VET-LSEG students through VET programmes.
- Potential employment opportunity available to VET-LSEG students after completing VET studies.
- Progression options available to VET-LSEG students after completing VET studies.
- Perceptions and aspirations of VET-LSEG students towards HE.
- Discouraging factors causing barriers for VET-LSEG students in pursuing HE.
- Encouraging factors that encourage and assist VET-LSEG students in attaining HE.
- Possible problems encountered by VET-LSEG students while pursuing HE studies.
- Recommendations to overcome barriers to HE.
- Roles and responsibilities of major stakeholders in helping VET-LSEG students to overcome barriers to HE.

Two types of data were collected using the questionnaires, including the numerical data collected through multiple choice questions and Likert Scale items, and textual data collected using open-ended questions. The data were collected from two different perspectives; the perspective of VET-LSEG students and the perspectives of CAs or school leaders from VET institutions. Thus, two set questionnaires were administered to collect data from two groups of respondents, namely the CAs and VET-LSEG students from the VET institutions in Malaysia. The data collected through questionnaires provided a preliminary understanding about the barriers to HE encountered by VET-LSEG students and the assistance required to overcome these barriers. These understandings were further scrutinised and explored during Phase 2 using semi-structured interviews, and the case study, in order to seek deeper and better understandings about the issues.

For CAs, questionnaires were sent via postal mail and email to the targeted respondents, as outlined in Table 3.2. For VET-LSEG students, the questionnaires were

administered with assistance of the CA or school leader of the respective VET institution in which they were enrolled for VET studies. The detailed procedures are outlined in Table 3.2. In this regard, the CA or school leader provided the researcher with the date and time at which to administer the questionnaires to the VET-LSEG students at the respective institution. Students who had consented to participate were then gathered by the respective CA or school leader and seated in a private room, either a classroom or meeting room on the school premise, to complete the questionnaire. The questionnaires were handed out by the researcher without any staff members of the respective institution being present. This was done to ensure student respondents were free of any influence or pressure caused by the presence of the staff member.

The researcher started the administration of questionnaires with a brief introduction about herself and the purpose of the study and questionnaires. Their role and rights were also explained to them before undertaking the questionnaires. In this regard, the students were reminded that their participation was voluntary and that they were free to withdraw from the questionnaires without any consequence at any point in time. While completing the questionnaires, the students were also invited to volunteer to participate in a semi-structured interview by signing the ‘Invitation to Interview’ attached with the questionnaire booklet. The respondents returned the completed questionnaires directly to researcher before leaving the room. The researcher left the premise after collecting all completed questionnaires.

Gathering of Semi-Structured Interview Data

Textual data was gathered using semi-structured interviews. As suggested Creswell (2012), the qualitative phase was used to further explore and explain the data collected through the quantitative phase. Thus, the interview sought explanations of the outcomes derived from the questionnaires, in order to enable a better understanding of the research issues, namely the barriers to HE encountered by VET-LSEG students and the strategies required to overcome these barriers (Cameron, 2009; Creswell, 2012). Since the questionnaires gathering data targeting about ten focus areas, the interviews also placed specific emphasis on the same ten focus areas. Instead of confining the

discussions with participants/respondents to the ten focus areas, however, the semi-structured interviews enabled the researcher the freedom to extend the discussion in order to broaden the exploration and deeper the understanding of the research issues.

The interview data were collected from five groups of participants; namely the VET-LSEG students, the CAs from VET institutions, the CAs or school leaders from HE institutions that offered progression pathways to VET-LSEG students, the CAs or school leaders from HE institution that had not offered progression pathways to VET-LSEG students, and representatives from Malaysian MOE. Except for the interviews with the VET-LSEG students, the interview sessions with other participants were all arranged directly with the participants by the researcher. In this regard, the researcher called or emailed the recruited participants to discuss and confirm the date and time and venue for the interview after receiving the signed consent form.

Participants had the opportunity to decide on the date, time and venue for the interview. Taking into consideration the safety of both the researcher and participants, all interview sessions were conducted during office hours at the office premises of the participants. Thus, the interviews with CAs and school leaders were conducted at a meeting room of the school premises, the interviews with MOE representatives were conducted at the meeting room within the MOE premises.

Of the students interested in participating in an interview, one student was selected from each institution by the researcher based on the selection criteria (Appendix 5). The selected students were arranged for interview with assistance of the CA or school leader of the respective institution. Thus, the researcher provided the name of the selected student to the respective CA or school leader, who then arranged the date, time and venue for interview. In this regard, all interviews with students were conducted during school hours in a private room within the premises of the institution where the student was recruited, without the presence of third party. This was done to ensure the respondents' privacy so that they felt they could talk freely without being influenced or pressured by any third party in the room. The researcher started all interview session with a brief introduction about herself and the study, followed by the explanation of the role and rights of the respondents. In this regard, the respondents were reminded that

their participation was voluntary and that they were entitled and free to withdraw themselves from the interview at any point of time without facing any consequence.

Each interview session had an average duration of 45 minutes, though some interview sessions took longer. Interviews with VET-LSEG students were conducted using Malaysian language to ensure the participants understood the interview questions and provided the responses comfortably. Other respondent groups were provided the option of speaking in English or Malaysian Language. Most participants were only introduced once, especially the VET-LSEG students, but a few CAs and representatives from MOE were participated in more than one session in order to gain further clarification if extra information was required.

All interviews were audio-taped and transcribed. Each interview transcript was labelled according to code allocated to the respective respondent. The interviews conducted in Malaysian language were transcribed in Malaysian language in order to maintain the originality and authenticity of the responses provided by the respondents. Only the direct quotes extracted and included in the writing were translated into English.

Gathering of Case Study Data

Only textual data were collected for case study, and these data were collected through on-site observations, document reviews and interviews at the institution under study. The case study focused on examining the role of the HE institutions, both in causing the barriers experienced by VET-LSEG students, and also in assisting the students to overcome them.

An investigation schedule (see Appendix 7) was developed to guide the gathering of data in the case study. Three methods, include observations, interviews and documentation reviews, were adopted to collect data during case study. The observations were conducted by the researcher during the site visits at the selected institution, while the documentation reviews were conducted through investigation of relevant second source data that included the official and unofficial reports provided by the selected institution and relevant authorities like the MOE and MQA, in Malaysia. Interviews

were conducted with relevant people at the institution including the academic and administrative staff, and UMET students from VET-LSEG background.

Data Analysis Methods

Two types of data were collected in this study, the numerical data and textual data. The numerical data were collected using questionnaires, while the textual data were gathered through open-ended questions in questionnaires, the semi-structured interviews and case study.

Analysing Numerical Data

The numerical data were analysed using IBM Statistical Package for the Social Science (SPSS) version 21. In the analysis process, the data collected through questionnaires were first entered into SPSS to generate frequency tables, consisting of basic details such as frequency counts for each item in the questionnaires, mean scores and standard deviation, and bar charts for preliminary analysis. The scores of questionnaire items were examined, and extreme figures such as the top or bottom scorings were highlighted for further analysis using statistical tests such as ANOVA, T-Test and Correlation (Lambert, 2012). Principle Component Analysis (PCA) and factor analysis were also conducted on Likert-Scale items, especially on the section of Discouraging Factors and Encouraging Factors, to help explore and summarise the main characteristics of the data sets, and identify the principle components among the listed variables (Osborne, 2015; Park, Dailey, & Lemus, 2002).

The use of factor analysis and statistical tests enabled a scientific and accurate interpretation of the data (Clough & Nutbrown, 2008; Hoy, 2010). The outcomes derived through the numerical analysis and statistical testing provided preliminary descriptions of the barriers to HE encountered by VET-LSEG students, the significant factors contributing to these barriers, and the significant assistance required to overcome the barriers. These outcomes were noted for further exploration and verification in the analysis processes of textual data, in order to obtain deeper understandings about the

research issues. The complete textual data analysis process is detailed in Chapter 4 of this study.

It is important to note that major parts of the study analysis was restricted to ANOVA because the key focus of the study was to identify the factors of importance to VET-LSEG students in Malaysia as reflected in the research questions. It did not set out to examine the relationships among the different factors that would be the focus of Multiple Regression or Correlational analysis. The ANOVAs provided results that showed the significance or non-significance of the factors in relation to the aspiration and actual progression of VET-LSEG students.

Analysing Textual Data

The textual data came from three different sources, namely the open-ended questions in the questionnaires, the semi-structured interviews, and the case study. Each source of data was first categorised and analysed individually, and the outcomes of each analysis were then put together for comparison and triangulation. In view of the less extensive volume of the data collected, a manual analysis method with use of computer was deemed sufficient and adopted (Welsh, 2002). Thus, the textual data were analysed manually and organised using Microsoft Word and Excel Spreadsheet.

The data from the questionnaires were first analysed in order to inform and guide the interviews and case study. As previously stated, this took place before the commencements of interviews in order to make effective use of the researcher's time. The analysis processes for both the interview and case study data commenced after the completion of the data gathering processes. Though the interview data were analysed before the case study data, the outcomes of both sources were subsequently examined and reviewed concurrently.

Thematic coding was used in analysis of qualitative data collected via interviews and case study (Creswell, 2012; Vaismoradi, Jones, Turunen, & Snelgrove, 2016). The analysis of textual data commenced with the coding process that helped organise the data collected through interviews and case study into a more manageable forms (Babbie, 2008; Lambert, 2012). The transcripts and records were read and reviewed, and the data

were extracted and categorised into thirty-five (35) emerging themes and sub-categories, including aspirations, students' intention to study and students' progression plan. The outcomes were recorded using Microsoft Excel spreadsheets. *Figure 3.5 provides an example of the coding outcomes.*

Figure 3.4 Coding Schedule of Interview Data

Categorising of Interview Data - Students

Themes/Sub-Categories	C1S2	C1S3	C1S4
Students profile	: I am studying office administration course....(Do you like the course?)Actually I do like it, the course is interesting, I get to meet people, and I learn administrative work. Yeah. But, I did have my own plan though people said it would be a waste of time, but I would love to do a nursing course after this, I want to be a nurse, but not a secretary...Yes, but my parents	I am doing automotive course here, learning about car engines. (like the course?)Yes, because I like to modify cars, and working with engines and machines. I chose to study this course myself, because I am interested in the course, and interested in cars.....Can your family support you financially?) Hmm...because, I think, it is too heavy for my family to bear, like my sister, she has	: I co to ne
Students aspirations-after VET	I want to study, until higher level. But I am not sure, because we are the first badge of diploma here, this vocational diploma has not been made 'famous' yet, we haven't seen anyone has been successful using this diploma (for employment or to continue study), so, I am not sure what I can do after this, yeah. I will apply,	Hmm, I think, I will get a job and start working, but if I can get an offer to continue my studies, I will study, higher level education. (What do you really want to do immediately after VET here?) I think I want to work and save money first then I will continue to study for higher education.	M sti ge an wi an
Students' aspirations-importance of HE	So given a chance, do you want to study HE?)Yes, because I will get higher salary, and I will get better job offer....(do you like your VET course now?)some more, like me, it is not my desire to study here, it was my parents who made arrangement for me to study here,	I think I will work first. Because I need to get some work experience, to learn more skills, to build more confidence before continue to study.	(W it, an kn sti

The coded data were then examined further by comparing different themes to search for agreement and disagreement, and interrogating each theme in order to search for overarching themes or concepts that gave a more comprehensive meaning to the data. The outcomes of this analysis were used to compare and triangulate with the statistical outcomes derived through numerical data collected in Phase 1. It is important to note that under the MMESD approach, the constant comparison method is adopted where qualitative data are constantly compared and triangulated with quantitative data to seek explanations and understandings about the research issues, in order to answer the research questions (Dye, Schatz, Rosenberg, & Colema, 2000). A similar process was conducted throughout the analysis process for every piece of data collected and analysed. The full analysis process is presented in Chapter 4.

Though the study was designed with significant reference to the ideas advocated by Creswell (2012) and Babbie (2008) and Yin (2003), the social norms and cultural sentiments in Malaysia were also taken into account, especially in the construction and

execution of the sampling and data collection processes. An example which illustrates the observation of cultural norms is that all interviews in this study were conducted during office hours at the work or study premises of the recruited respondents. Ensuring work activities were conducted during work hours within the work premises is not only an accepted professional norm in Malaysia, but also a professional conduct expected of all involved parties, especially those that are involved in governmental or educational business or events in Malaysia. Another example was the involvement of CAs or school leaders in the recruitment of students. This is again a general practice in the public school environment where school leaders must be involved in activities or events that involve students. These are the small details that worth noting and taken into account should similar study be designed and conducted in Malaysia.

Chapter Summary

This chapter has presented the Mixed Methods Explanatory Sequential Design (MMESD) adopted in this study and provided justifications about the approach employed. The instruments and procedures employed in gathering and analysing data as well as in deriving research findings are also presented to enable replication. The next chapter details the analysis of the data and the findings of the study.

Chapter 4 Analysis and Discussion

In this chapter, the findings of the study are presented. The quantitative data collected through questionnaires was analysed using SPSS and results are discussed in conjunction with qualitative data collected through interviews and a case study alongside relevant literature. The presentation commences with a brief report on the students' profiles. The students' aspiration to HE and their opportunity to participate in HE are then described and associated with their barriers to HE. The chapter concludes by identifying the major barrier encountered by the VET-LSEG students in progressing for HE, and the major factors contributing to the barrier.

Students' Profile

The student respondents were selected from VET colleges, purposely chosen based on location. Three colleges were picked from rural areas and three from the city centres around Sabah, Terengganu and Klang Valley. Students in the college were selected based on recommendations of CAs according to the students' socioeconomic and education background. Students with LSEG background were chosen for both survey and interviews. Out of the 120 students selected, 43% were from rural areas and 57% were from urban areas. Although the students were selected based on recommendations of the respective institutions, the official records about family income level of students were not provided. Indications can be obtained, however, through responses from students about the monthly household income of the family.

Other than the 22% of students who responded unsure, 52% came from families with a monthly household income of less than RM3500 (approx. USD880) per month, which is only about half of the national average household income at RM6141 (Economic Planning Unit, 2015b). Other than that, 18% responded as having household income more than RM3500, and only 8% had a household income more than RM5000 (approximately AUD1250) per month. Out of the 52% living with household income less than RM3500, more than half of them survived with less than RM1500 per month,

which was only about AUD300 and less than one quarter of the reported average monthly income.

With respect to the family size, 88% students indicated having three or more siblings in the family and the remaining 12% had two or less siblings in the family. Out of the larger group, 50% had five or more siblings, 27% had four and 23% three siblings in the family. Though the students' responses on household income and family size were not conclusive in confirming the financial and socioeconomic status of the students, the relatively low household income and the relatively large family size indicated the adverse financial and economic condition of the family, and conformed to the descriptions of LSEG background for this study. Thus, it is reasonable to assume the respondents are generally VET students with LSEG background (VET-LSEG students).

After confirming the socioeconomic status of the students, their aspiration for HE and opportunity to participate in HE were investigated. This was done with the aim of assessing whether the VET-LSEG students had low aspiration for HE and encountered difficulty in participating in HE. The purpose of the investigation was to determine if the aspiration of VET-LSEG students, and their lack of opportunity to participate in HE , were both significant barriers stopping them from progressing to HE after completing their VET studies.

Aspiration for HE and Opportunity to Participate in HE

The aspiration of VET-LSEG students was highlighted in this study because it demonstrated the students' perceptions towards HE and their intentions to pursue HE. It was also highlighted because VET-LSEG students are generally claimed to have lower aspiration for education in most literature, which subsequently caused a reluctance in students to participate in HE. However, instead of assuming the VET-LSEG students possessed low aspiration for HE, as suggested by Tamuri et al. (2005) and Nor et al. (2011), this study took a prudent step to check the aspiration of the students. Besides, it was also the intention of this study to identify if there was a gap between the students' aspiration for HE and their actual opportunity to participate in HE. Therefore, each

construct was investigated separately, especially in relation to the progression of VET-LSEG students to HE after completing their VET studies.

Aspirations of VET-LSEG students

The aspirations of VET-LSEG students were first assessed through analysing the data collected through multiple-choice questionnaires in Section 1: *Background and Profile*. The subject was analysed from two perspectives; students' progression options after completing VET studies, and students' perceptions about pursuing HE. The initial frequency count derived the following outcomes:

- The students' responses to section 1: Item 8, where students were asked to respond what would they intend to do after completing their VET studies. The initial frequency count showed that 82% students intended to pursue some sort of higher level education or training. Comparatively, only 7% intended to work and earn money, and the remaining 11% students were unsure.
- The students' responses to Section 1: Item 15, where students were asked to respond to what VET students should do after completing their VET studies. The initial frequency count showed that 81% students agreed that VET students should pursue HE and only 9% agreed that VET students should leave school to work. The remaining 10% of students provided Neutral responses.

The statistics suggested that VET-LSEG students generally had good perceptions about HE and strong intentions to pursue HE. The students' perceptions and intentions suggested their high aspirations for HE, and opened the door for further investigations, especially in searching for reasons explaining this high aspiration for HE.

Students' high aspirations were linked to the various benefits students perceived in HE. In this regard, students identified HE as a means to improve their knowledge and skills, and thought HE would provide them better qualifications that could subsequently lead to better employment and higher salaries. These perceptions were evidenced in the

students' responses provided through questionnaires under the *Benefits of HE* (BHE) section. The initial frequency count showed that, 96% students agreed that they could get better knowledge and skills through studying HE (Item BHEa), 99% agreed that they could get better employment (Item BHEb), 94% agreed that they could get a higher salary (Item BHEc) and 97% agreed they could obtain better career prospects (Item BHEe) through studying HE (refer Table 4.3 for details).

In addition, students also believe that they could improve their disadvantaged situations through HE. In this regard, the frequency count showed that 96% students agreed that HE could help to improve their income level (Item BHEd), 97% students agreed that HE could help to improve their life styles (Item BHEf), 99% students agreed that HE could improve their self-esteem (Item BHEg) and 81% students agree that HE could improve their social status (Item BHEh) (refer Table 4.3 for details).

Table 4.1 *Benefits of HE (N=120)*

Variables	Agree (%)	Disagree (%)	Neutral (%)
BHEa: Better knowledge and skills	96.0	0.0	4.0
BHEb: Better employment	99.0	0.0	1.0
BHEc: Higher salary	94.0	1.0	5.0
BHEd: Improved income level	96.0	1.0	3.0
BHEe: Better career prospect	97.0	0.0	3.0
BHEf: Improved life style	97.0	0.0	3.0
BHEg: Improved social status	81.0	1.0	18.0
BHEh: Improved self-esteem	99.0	0.0	1.0

The VET-LSEG students' high aspirations for HE and good perceptions of HE were put under further investigation using interviews. The data collected through interviews confirmed the students' positive perceptions about HE and their high aspirations for HE. In this regard, out of the 12 students interviewed, all 12 students expressed a desire to continue to HE after completing their VET studies. In addition, the respondents also agreed that HE could help to improve their lives in certain ways,

including getting better employment, higher salaries and improving their living standards. One of the students responded, for example,

Yes, it is good, because with a diploma, you get a different salary, and with degree, the salary is even higher. With university qualifications, we can get better and more salary. That makes it easier for us to pay for our everyday expenses. (C1S3)

Other students also thought that they could acquire better knowledge and higher skills from HE studies, such as this student mentioned,

Yes, because I want to learn more, in the field that I am currently studying, want to study more in-depth, want to explore and understand broader. (C1S4)

Other benefits raised by students included, making their family proud by being the first one in the family to obtain an university qualification, and being and feeling more respected by society.

Though students generally showed appreciation of and high aspirations for HE, they also had high regard for employment. This was first noticed in the students' response in the questionnaires under the Background and Profile section. The students were asked to respond whether HE was more important than employment (Item 9), and the responses showed that only 16% of students agreed that HE was more important than employment, with 38% disagreeing. Nearly half of the students (46%) were unsure about the relative importance, but the result did imply that LSEG students generally recognised the significance and importance of employment and such recognition could be due to their adverse financial backgrounds which required them to work and bring home money as suggested in CSHE (2008) and Schindler and Reimer (2011).

To explore these ideas further, questionnaire responses in the section of Progression Options were also analysed using factor analysis. A Principal Components Analysis (PCA) with Oblimin rotation was performed on the 9 items of the Progression Options section of the questionnaire. Three factors were identified accounting for 71.5% of the variance, with Factor 1 contributing 38.1%, Factor 2 18.2% and Factor 3 15.1%. The factor loadings are shown in Table 4.2, with loadings less than 0.30 suppressed. The full PCA analysis is illustrated in Appendix 11.

Table 4.2 *Factor Analysis Table for Progression Options*

	Loadings			Communality
	Factor 1	Factor 2	Factor 3	
POh-Met HE institutions about HE	.896	.170	-.036	.760
POf-Provided info about HE	.794	.006	.157	.690
Poi2-Met employers about work	-.791	-.009	.186	.612
POg2-Provided info about work	-.734	.288	.040	.700
POe-Provided finances and supports to pursue HE	.632	-.073	.266	.553
POb2-Work after VET	.091	.930	-.027	.845
POd2-Advised to work after VET	-.097	.862	.023	.782
POc-Advised to pursue HE after VET	-.004	-.67	.866	.772
POa-Puruse HE after VET	.011	.056	.854	.719
% of Total Variance	38.1	18.2	15.1	
Total Variance			71.5%	

The three factors extracted could be interpreted as:

- Factor 3: Aspiration for HE (POa+POc)
- Factor 2: Aspiration for Employment (POb+POd)
- Factor 1: Progression Procedures (Poe+POf+POg+POh+POi)

The factor scores for Factor 3: Aspiration for HE were derived by adding together the responses values of item ‘POa- Puruse HE after VET’ and item ‘POc- Advised to pursue HE after VET’. The factor scores for Factor 2: Aspiration for Employment were derived by adding together the response values of item ‘POb- Work after VET’ and ‘POd- Advised to work after VET’, and the factor scores for Factor 1: Progression Procedures were derived through adding together the response values of the remaining items under PO, included the POe-, POf- Provided info about HE, POg- Provided info about work, POh- Met HE institutions about HE, and POi- Met employers about work.

The high variance contributed by Factor 1, Progression Procedures, indicates that these are major issues for this group of students. The results suggest that students’

choices were impacted by their aspirations for both HE and employment, and the progression procedures involved. The following section presents the impacts of the students' aspirations. The progression procedures are relevant to the application and admission processes for HE, and the details are discussed in the section, Education Systems. The Factor 2 and Factor 3, which depict the Aspiration for Employment and Aspiration for HE respectively will be used in the subsequent statistical analyses, especially in determining the significance of the contributing factors found to have contributed to barriers encountered by the VET-LSEG students.

Aspiration for HE and employment

The acknowledgement of the importance of employment seemed to contradict the high aspiration for HE but was explained in some students' responses during interview. In this regard, though all students interviewed had expressed interest in continuing to HE, not all of them expressed the intention to pursue HE immediately after completing VET. Out of the twelve students interviewed, only three students responded that they would commence their HE studies immediately. Two students said that they wished to study but were asked by their parents to work first. Others responded that they would need to work a few years in order to save money before they can study again. The following quote demonstrates a typical reply from these students,

Hmm...because, I think, it is too heavy for my family to bear, like my sister, she has to study too, so.....I think I want to work and save money first then I will continue to study later. But, if I can get scholarship and living allowance then I will continue to study, otherwise, I will work first, save some money then only continue to study. (C1S3)

The responses show consistency with studies like CSHE (2008) and Schindler and Reimer (2011) who argued that VET-LSEG students usually see more relevance in employment in fulfilling their immediate needs than HE due to their disadvantaged backgrounds that encourage them to work more than to study. Thus, despite acknowledging the significance of HE in improving their lives, the students realised the reality of their adverse financial background which might require them to seek

employment after completing VET studies. In this regard, one student, when he was asked whether HE was necessary, answered,

It is necessary, but for those who face [financial and social] problems, they don't get to go anyway, but if possible, I think everyone should study for higher education in university. (C5S1)

Discrepancy between aspiration and opportunity to participate in HE

The students' responses suggested that VET-LSEG students understood the importance of HE and generally aspired to HE. Some responses on the other hand suggested that though students aspired to HE they might not be permitted to pursue for HE due to their adverse background. These results provided two important implications about the barriers encountered by VET-LSEG students in Malaysia:

- There is a discrepancy between the students' aspirations and the students' opportunities to participate in HE. Aspirational students might not necessarily get the opportunity to participate in HE.
- The students' aspirations and their opportunities to participate in HE are both subject to change. The presence of negative contributing-factors could turn them into significant barriers barricading students from progressing to HE by, for example, weakening the students' aspirations for HE, or eliminating the students' opportunities to participate in HE.

These indications warranted further investigations, especially in identifying the negative contributing-factors that could change the students' aspirations and opportunities to participate into barriers.

Factors Contributing to Barriers to HE

This section presents the investigations on the contributing factors that pose negative effects on the VET-LSEG students' aspirations for HE and opportunities to participate in HE. The presentation commences by identifying these major contributing

factors, followed by a discussion of the significant effects potentially posed by each contributing factor. This section concludes by considering whether the students' aspirations, or their opportunities to participate in HE become barriers when influenced by the identified contributing-factors.

The contributing factors were first examined through analysing VET-LSEG students' responses via Likert Scales to the items listed as 'Discouraging Factors' (DF) in the questionnaires. These items were identified through the literature (see Chapter 2), with reference to studies like James (2008), Zainal et al. (2009) and Tamuri et al. (2005). In responding to the items, VET-LSEG students were required to indicate how much they agreed that the focus of the items could discourage them from progressing to HE.

The responses of the students are presented in term of 'Agree', 'Disagree' and 'Neutral'. The 'Agree' comprises the scores of "Strongly Agree" and "Agree"; The 'Disagree' comprises the scores of "Strongly Disagree" and "Disagree", while the 'Neutral' captures only the scores of "Neutral". The responses are summarised in Table 4.3, ordered from most to least agreement.

Table 4.3 *Descriptive Statistics for Discouraging Factors (N=120)*

Items	Agree (%)	Disagree (%)	Neutral (%)
DFa-Financial Difficulties	55.0	20.8	24.2
DFn-Difficulty in getting HE offer	41.0	20.0	39.0
DFi-Difficulty in accessing HE	39.0	38.0	23.0
DFh-Lack of progression pathways	31.0	43.0	26.0
DFp-Difficulty in getting acceptance	30.6	27.5	41.7
DFm-previous dropout rate from HE	29.0	39.0	32.0
DFl-Different assessment styles	26.0	39.0	35.0
DFj-HE is too difficult	25.0	38.0	37.0
DFk-Different teaching styles	25.0	42.0	33.0
DFb-Family & social discouragement	22.0	54.0	23.0
DFe-Lack of info about HE	22.0	46.0	32.0

DFg-lack of confidence	22.0	51.0	27.0
DFo-HE application procedures	21.0	50.0	29.0
DFc-HE is irrelevant	20.0	55.0	25.0
DFf-Lack of interest in HE	15.0	67.0	18.0
DFd-HE is not important & beneficial	4.0	83.0	13.0

The five items that received the highest agreement response rates were highlighted for further investigation. Among the five items, only the DFa: Financial Difficulties received more than 50% agreement from the students. The other four items received agreement rates that ranged from 31% to 41%. The high agreement rate on Financial Difficulties indicates the significance of the factor in affecting the progression of VET-LSEG students. Though the agreement rates are lower, it is worth noting that all the four other factors represent difficulties caused by the education system in Malaysia. The results thus indicate the important effect of the education system on the progression of VET-LSEG students.

The initial frequency count suggested two contributing aspects to barriers encountered by VET-LSEG students, Financial Difficulties and the Education System. To explore this finding further, the students' responses to the Discouraging Factors (DF) items listed in the questionnaires were tested using Exploratory Factor Analysis to examine if there were other underlying factors affecting the students' progression to HE.

A Principal Components Analysis (PCA) with Oblimin rotation, therefore, was performed on the 16 items of the Discouraging Factors section of the questionnaire. Inspection of the correlation matrix revealed the presence of many coefficients of 0.35 and above. The Kaiser-Meyer-Olkin value was 0.87. Three components were identified accounting for 62.5% of the variance, with Component 1 contributing 45.4%, Component 2 contributing 9.7% and Component 3 contributing 7.4%. The factor loadings are shown in Table 4.4, with loadings less than 0.35 suppressed. The full PCA analysis is illustrated in Appendix 12.

Table 4.4 *Factor Analysis Table for Discouraging Factors*

	Loadings			
	Factor 1	Factor 2	Factor 3	Communality
DFk-Different teaching styles	.957	-.018	-.090	.829
DFl-Different assessment styles	.879	-.008	-.072	.712
DFo-HE application procedures	.795	-.072	.025	.602
DFj-HE is too difficult	.733	.153	.045	.701
DFm-previous dropout rate from HE	.633	.155	.129	.623
DFi-Difficulty in accessing HE	.523	.121	.225	.527
DFf-Lack of interest in HE	.030	.877	-.065	.760
DFd-HE is not important & beneficial	.076	.814	-.221	.640
DFc-HE is irrelevant	-.027	.690	.213	.597
DFh-Lack of progression pathways	.046	.519	.261	.463
DFg-lack of confidence	.433	.480	.054	.652
DFe-Lack of info about HE	.062	.446	.299	.423
DFb-Family & social discouragement	.322	.362	.139	.436
DFp-Difficulty in getting acceptance	-.086	.138	.842	.732
DFa-Financial difficulties	.059	.045	.722	.591
DFn-Difficulty in getting HE offer	.382	-.240	.677	.714
% of Total Variance	45.4	9.7	7.4	
Total Variance	62.5%			

The factor scores for Component 1 were derived through adding together the response values of items ‘DFk + DFl + DFo + DFj + DFm + DFi + DFg + DFn’. While the factor scores for Component 2 were derived through adding together the response values of items ‘DFb + DFe + DFg + DFc + DFd + DFh + DFf’, and Component 3 by the response values for items ‘DFp + DFa + DFn’ (see Table 4.4 for description of items).

The three components extracted could be interpreted as:

- Component 1: Consequence of mismatches between VET and HE (Mismatch)
- Component 2: Demotivation towards HE (Demotivation)
- Component 3: Application related problems (ARP)

The Mismatch and the ARP components are both associated with the difficulties possibly caused by the education system, which is consistent with the results during the initial frequency examinations, providing further evidence about the significant impact of the education system on VET-LSEG students' progression to HE in Malaysia.

The items loaded on the Demotivation Component consisted of DFb (Family and social influences), DFc (HE is irrelevant), DFd (HE is not important and beneficial), DFe (Lack of information about HE), DFg (Lack of confidence), DFh (Lack of progression pathways), and DFk (Lack of interest in HE). These seven items represent the VET-LSEG students' family background, low confidence, social influences and cultural influences.

Combining the outcomes of the initial frequency counting and the factor analysis, six contributing-factors to barriers encountered by VET-LSEG students were highlighted for further exploration. These six contributing-factors include:

- Financial Difficulties
- Education System
- Family background of VET-LSEG students-
- Low confidence of VET-LSEG students
- Social influences
- Culturally related issues

The important results obtained through the initial frequency examinations and factor analysis suggested that each contributing-factor/aspect to be put under further examination, especially on their effect on the progression of VET-LSEG students, in term of students' *aspirations for HE* and their actual *opportunity to participate in HE*. The findings are presented under the heading of different contributing-factors. Under

each contributing-factor, the findings of students' aspirations, and their opportunities to participate in HE are discussed.

Contributing Factor 1-Financial difficulties (FD)

The impact of "Financial Difficulties" (FD) on aspirations was first investigated, followed by the impact of FD on students' opportunities to participate in HE. The impact of FD on VET-LSEG students' aspiration for HE was examined using responses collected from student respondents and Chief Administrators (CA) from VET institutions in Malaysia. The responses of VET-LSEG students were analysed and discussed alongside the responses collected from CAs, and compared with previous studies. The findings about *FD* are summarised in Figure 4.1.

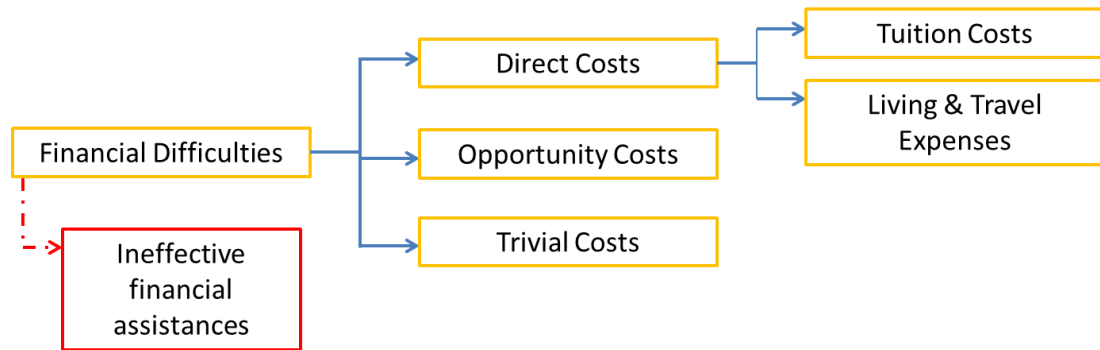


Figure 4.1 Summarised Findings about FD

Students' views

The FD was established as the Discouraging Factor attracting highest agreement rate from the VET-LSEG students as compared with other Discouraging Factors listed in the questionnaires. The high agreement rates indicate the significance of FD in affecting students' progression to HE. The high Neutral rate of responses towards FD, at 24%, also indicate the significant impact of financial difficulties on students' progression to HE. The high Neutral rates suggested at least two possible implications:

- These students had not thought about pursuing HE and thus were not concerned about the financial implications

- These students were still deciding whether to work or to continue to HE and thus were indifferent about the impact of financial difficulties

In addition, there was also a surprisingly high Disagreement of 21% of responses, which challenged the key effect of FD on students' aspirations and opportunities to participate in HE. To investigate this situation further, a One-Way ANOVA was conducted to explore the impact of students' perceptions of FD on their *Aspiration for HE*. Participants were divided into five groups according to their perception of FD (Strongly Disagree, Disagree, Neutral, Agree and Strongly Disagree). There was no statistically significant difference in the aspiration for HE between the five perception groups: $F(4,119)= 1.10, p=0.36$. This finding suggested that FD had not caused a significant impact on VET-LSEG students' aspirations for HE. The full ANOVA analysis process is provided in Appendix 13.

The non-significant impact of FD on students' aspiration could be explained by the wide availability of financial assistance provided for HE studies in Malaysia, especially the PTPTN (education loan for HE) which is provided by the Malaysian government and is easily accessible by any Malaysian students that manage to get an offer for HE studies from Malaysian HE institutions (Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN), 2016).

Although the statistical analysis suggested that the FD was not a significant factor affecting students' aspiration for HE, further investigation showed that it was an important factor affecting students' actual opportunities to participate in HE. The impact of FD on students' progression was investigated and explored during interviews. Out of twelve students interviewed, seven students acknowledged FD as the biggest barrier affecting their opportunity to participate in HE. Typical responses included,

Difficult...like, a lot of expenses, and cost of education is also very expensive, yeah, that would be the difficulty, because my parents are not wealthy. (C1S4)

Maybe financial assistance, because, like right now, the only one working is my mother, so I don't want to burden her, so, yeah, money is problem.(C3S5)

The other five students interviewed did not refer to FD as the biggest barrier but did also acknowledge that it could affect their decision to pursue HE. The following are two typical responses provided by students,

Hmm.... don't know, I think so, but it will be better if I can get scholarship, so that my daddy's money won't be wasted.... That's why I said, I should work first, and to continue study later, with my own savings. (C1S2)

I think they (parents) do support my decision to continue my studies... I think, depends on whether I can get finance support, if I can get enough money, maybe they will agree for me to continue for higher education. (what type of financial support?) scholarships! We talked about this before, like, I asked my parents what should I do after completing my (VET) diploma here, whether to continue to study or to work, and my parents told me it's better that I work and save more money first, after that, I can think about whether to study or to work, but what is more important now is to make sure that my future is secured. (C1S3)

The students' responses suggested that though students had high aspiration for HE that was not greatly affected by FD, they were also being realistic about the financial issues and aware of how their opportunity to participate in HE was affected by the issue. This finding coincided with the initial outcomes derived through questionnaires. The following comment from one of the students demonstrated the typical comments provided by respondents,

My plan, if, if possible, I would like to continue my studies to get a university degree. If I don't get the opportunity to study, I will get a job around this (residential) area and work. (C1S4)

Thus, the students' choices were open, not only to participate in HE but also to seek employment, which explains their also high aspiration for employment. Besides, the students were also aware that their opportunities aligned closely to their financial situation, as exemplified in the interview response:

Me, it depends, depends on the financial situation. If I can get the opportunity, definitely I will continue to study. (C1S3)

CAs' view

In contrast, the Chief Administrators (CA) from VET institutions seemed to be more concerned about the impact of FD on students' than the students themselves. Out of the 17 questionnaires received from CAs from 17 VET institutions, 88.2% (15/17) agreed or strongly agreed that FD was a significant factor discouraging students' aspirations and decisions in pursuing education and only 11.8% (2/17) disagreed.

The CAs' concern was also apparent in the responses during the interview. Out of the six CAs interviewed, three of them acknowledged FD as the most critical barrier causing difficulty to VET-LSEG students in progressing for HE. The typical response of CAs was,

The biggest barrier would be the finance. I have been here since 1988, almost all of our students who couldn't continue their studies were because of financial problems. Even though our government provides study loan, but there are other issues faced by the students and families, so I think that's the main barrier, finance, for the low income group. (C3A1)

The other three CAs showed less concern about FD because of the availability of financial assistance from the Malaysian government, with statements such as,

I think our government has actually done enough. Our government has provided education loan like PTPTN, then our state level they provide education loan too, so finance is really not a problem if really the students want to study. Besides for skills students, they get supports also through our JPK, Jabatan Pembagunan Kemahiran, they provide education loan too. (C5A1)

Even though the FD was not referred to as the most critical barrier by these CAs, they did agree that FD had an impact on students' aspirations for HE, despite with the wide availability of financial assistance from the government. The problem was also more apparent to those from poorer families, and this is explained in this CA's responses,

In my opinion, finance is really not a problem, if the student really want to study, fee is not a problem, but just the family, because sometimes the PTPTN loan does not provide enough, the student will still need some money from the family, of course there will be situation where the family cannot fork out the money, even only 1/3 of the money required, then the student will face problem. (C5A1)

The CAs seemed to be able to see the impact of FD more seriously than the students themselves. The different level of concern shown towards FD indicates the possibility that both groups of respondents could have interpreted the students' aspiration and how it is impacted by FD differently. In this respect, students could have referred to a target or ambition that could be realised in the future, as this student suggested,

I wish to continue my studies in university....but I will work first, and continue my studies in university after working for sometimes, (why?) because I want to gain work experience first, then only to study again to improve my knowledge. (C2S4)

CAs could have interpreted the aspiration as the actual effort of students in enrolling for HE immediately after VET. The CAs' different interpretation is exemplified by the response of this CA,

Because finance is the common issue, Money is the first thing come to their mind when they consider whether to continue their studies, because of financial hardship in the family....I think ...those from better financial background have higher tendency to continue their studies, up to degree or master, those who have no money, they might also want to continue their studies but they can't do it, unless scholarship is awarded to them. (C6A1)

Comparing views of VET-LSEG students and CAs

The difference in views creates discrepancy between the two groups. To students, their aspiration is an ambition to be carried forward and realised in the future, and such ambition is delayed by the existing financial situation but is not defeated and can still be realised when they are financially ready. To the CAs, the students' aspirations are considered as students' actual effort in enrolling themselves into HE immediately after VET. Such perceptions do not take into account students who wish to or actually do continue their education at a later stage. Thus, students who fail to enrol immediately after VET are considered to have lost their aspiration for HE. In this regard, CAs perceived more students being affected by FD as they have not taken into account those who have delayed their enrolment.

Impact of financial assistance

Though not many students think that their aspiration can be significantly affected by FD, many students believe that their desire for HE can be enhanced with provision of some form of financial assistance. Among the three different financial assistance packages commonly provided in the country, the ‘Living and other necessary allowances’ attracted most interest from the students with an 80.9% agreement rate. ‘Scholarship’ was the second popular choice which received 75% agreement, while ‘Education Loan’ though important, received the lowest agreement rate at 66% (see Table 4.5 for summarised frequency counts). The lower enthusiasm for an education loan is consistent with literature like Forsyth and Furlong (2003) that argue LSEG students are less comfortable with education loans and prefer financial assistance that does not require repayment.

Table 4.5 *Descriptive Statistics for Financial Assistance (N=120)*

Items	Agree (%)	Disagree (%)	Neutral (%)
EFa-Scholarships	75	7	18
EFb-Education Loan	66	9	25
EFc-Living & other allowances	81	5	14

The higher preference for ‘Living and other necessary allowances’ over ‘Scholarships’ implies that students’ concerns were not just limited to tuition fees, which are usually covered by scholarships. The living and other related expenses that could be incurred during and even before enrolling for study were also an issue. As this CA explained,

..like students from low socioeconomic families, sometimes they need financial aids before they even enter universities, because they need to pay fees, like registration fee, so sometimes some of these families can’t even afford these fees, nowadays these fess can come up to thousands ringgit, because they might need to pay to get the hostel room too. (C4A1)

For students from poorer households, the problem is not just limited to big expenses, in many cases, trivial costs can still be burdensome. This experience was detailed by a CA,

I think money is the biggest problem, for this lower income, I mean, lower income group, err, it is a problem, because I had a student before, she scored good result, but she didn't continue to study, and she later told me that she didn't have money, and after we got to know that, she just decided that she didn't want to study anymore. But we didn't know her problem, after I got to know that she had money problem, so, so, it was already too late for the teacher to donate money to help. (Do you mean teachers actually make donations to students in need?) Yeah, we give money to help, in her case, because she is a very bright student! But it was already late when we got to know that she had money problem, she didn't tell anybody earlier, I asked her why didn't she want to continue to study, and she told me that she didn't have money even for transportation to go to town for the registration with the institution. But, no one knew, and we only got to know through a friend of her later, so, we got in touch with her, we advised her to continue study. We even told her that we could collect 'donation' from the teacher to support her, at least for the first semester. Yeah, yeah, we do such things, just to help students, but we couldn't help much in her case, by the time we got to her, she had already decided not to continue to study anymore. (C1A1)

These responses of CAs brought a different dimension to the financial problems encountered by VET-LSEG students, especially those from poorer household. The general perception that FD were limited to only big expenses like tuition fees no longer applied. The findings suggested that students seemed to have bigger problem than that. Although the tuition fees and living expenses were still a major financial problem, the trivial expenses like application fees or even transportation or postal fees to get the application out to the relevant institutions could also be critical for these students. The findings shed light on the reasons why, despite the easily accessible financial assistance, students were still not progressing to HE.

Comparing the responses of students with responses from CAs provided two viewpoints in considering the effect of FD on students' aspirations. It was apparent that the CAs were commenting based on their experiences in dealing with and observing students, but the students, on the other hand, responded with their confidence and beliefs on what they could do and intended to do. These responses though are not sufficient in

drawing conclusions about the impact of FD on students' aspirations, but have nonetheless provided three useful implications:

- VET-LSEG students' aspirations cannot be dismissed by their non-enrolment in HE, especially in cases where students have not enrolled for HE immediately after completing their VET studies.
- VET-LSEG students' aspirations can be carried forward and can be realised in the future. This is especially true in cases where aspired students choose to work instead of continuing for HE after completing their VET studies. The findings suggested that the employment enhanced the students' financial background and prepare them financially for the HE studies at a later stage
- The students' plan in delaying participation in HE indicates that the availability of progression pathways is not only important for the progression of current VET students, but also for those who have graduated in the past, as they might have a carried-forward aspiration waiting to be realised, even after many years of working.

Financial assistance and barriers to HE

In view of the students' positive responses towards financial assistance, it is important to examine the impact of financial factors on students' aspiration for HE. This investigation helps to examine not only the significant influence of financial assistance on students' aspirations but also in assessing if students' aspirations are adversely affected in situations where financial assistance is not available.

In order to do this, the students' views about financial assistance were first examined. Three items in the questionnaires were investigated; Item RECa (Provide financial assistances) under the Recommendation section, Item ROGa (To provide financial assistances) under the section of Role of Government, and Item RO Ia (To provide financial assistances) under the section of Role of Industrial Partners. The frequency count for the three items showed that 91% students agreed that that their chance to attain HE could be improved with provision of financial assistance, 93% of students agreed that government could help them in attaining HE by providing financial

assistance, and 90% of students agreed that various industries could help them in attaining HE through providing financial assistance (the frequency counts for the three items are illustrated in Table 4.6). The findings suggested the importance of financial assistances, which also raised the need to conduct further investigation on the impact of financial assistance on students' aspirations.

Table 4.6 *Students' perceptions about Financial Assistances (N=120)*

Items	Agree (%)	Disagree (%)	Neutral (%)
RECa- Provide financial assistances	91	1	8
ROGa- To provide financial assistances	93	0	7
ROIa- To provide financial assistances	90	0	10

The impact of Financial Assistance on students' aspiration was investigated using Pearson product-moment correlation coefficient. The opinions of students about financial assistance were accumulated to form a new variable named "Financial Assistance". The relationship between the combined Financial Assistance and students' aspirations for both HE and employment was then examined using Pearson product-moment correlation coefficient.

Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The result showed that there was a moderate, positive and significant correlation between the students' aspiration for HE and availability of financial assistances, ($r=0.30$, $n=120$, $p=0.01$). Increases in availability of financial assistance were associated with increases of aspirations for HE. The results are presented in *Table 4.7* and the full analysis process is provided in Appendix 14.

Table 4.7 *Pearson's Product-Moment Correlations for Financial Assistances with Aspiration for HE*

Variables	M(SD)	Financial Assistances	Aspiration for HE
Financial Assistances	13.33(1.73)		.30
Aspiration for HE	8.65(1.28)	.30	

N=120. *p<0.01

The positive relationship between financial assistance and students' aspirations suggested the important impact of financial assistance in affecting VET-LSEG students' aspiration for HE. The result is also consistent with the responses provided by students during the interview, where three out of six students referred to financial assistance as the most important factor in making HE achievable. Although the other three students did not mention financial assistance as the most important help required, they also acknowledged its significance in improving their chance in obtaining HE.

Forsyth & Furlong (2003) and Long (2014) suggested that students react differently to different types of financial assistance, and students with financially disadvantaged backgrounds usually are less likely to apply for financial assistance that requires repayment, for example loans. In view of this, it is important to examine students' reactions towards different types of major financial assistance provided in Malaysia.

In order to do this, the students' responses to financial related encouraging factors, including scholarships, education loan and living allowances, were examined (see Table 4.5). The responses of students on these factors demonstrated not only the types of financial assistance required but also the types of assistances preferred.

The preliminary frequency counts on each factor showed that the most preferred assistance by VET-LSEG students was the 'Living and other allowances', followed by the 'Scholarships' that usually covered tuition fees. While the least preferred assistance was the education loan.

The students' stronger preference for 'Living and other allowances' suggested that the students required assistance and support not only on paying tuition fees, but also on many other trivial costs. Such needs were especially relevant to students that were required travel from a different city or township to study. The following statement provided by a student explains the situation,

Hmm, the most important assistance would be the financial assistance. This is very important because to us, because most students here, not that we have no money but just that we don't have enough money, some of us are not very wealthy, so financial assistance is very needed, like accommodation, that is important too, and food allowance, err, like here, we have free food provided in our canteen, it will be good if the universities can provide the same. Transportation too, free transport is also important. (C5S2)

On the other hand, the students' lower preference for 'Education Loan' was found due to their reluctance in incurring debt, and this finding is in consistent with Forsyth & Furlong (2003).

The reluctance to incur debt is undoubtedly a logical reason especially among the LSEG students who are already financially disadvantaged. The debt could not only increase the financial burden of the family but there was also a fear of not being able to get employment after graduation that can enable them financial power to repay the debt. The response of the following student explains the situation,

Hmm...worry, because university education doesn't guarantee that one will get employed. Unless if they could score very good result, then, maybe they will get hired, otherwise, they might be unemployed too, then we will end up in debt and not being able to pay backYes, my bigger concern is still on whether I can get a job after finishing university education, yeah, because there is no guaranty that we will get employed after graduating from university. (C1S2)

The CAs also recognised this problem. The following responses of the CAs explain the limitation to education loans that makes this assistance less favourable among students,

As long as they get offer to study, they can apply for PTPTN (Malaysian loan for higher education) and will get approval. However, that doesn't mean students can get full amount of loan they apply, maybe the amount allotted is just enough for the school fees. In such case, students will have difficulties

getting enough money for food and accommodation. So parents will need to fork out the money for the food and accommodation and also other expenses....Yes, PTPTN is easier but, like I said just now, the PTPTN doesn't provide full amount, like you can apply for RM14,000 but only RM12,000 is released, so the money is only enough to pay the school fee, but what about the other expenses? They will still need more money! (C1A2)

In my opinion, finance is really not a problem, if the student really want to study, fee is not a problem, but just the family, because sometimes the PTPTN loan do not provide enough, the student will still need some money from the family. Of course there will be situation where the family cannot fork out the money, even only 1/3 of the money required, then the student will face problem. This does happen but not very often, there are students facing situation like this but not many. (C5A1)

Scholarships, although a more preferred option than a loan, were found to be less accessible by the VET-LSEG students however, due to their lower academic achievements. This was pointed out especially by CAs and a typical response was as follows,

Money is still a problem, and the reason is that we don't have many universities here (this respondent was from Sabah and there was only one university in Sabah while this interview was taken place), and it is also more difficult for vocational students to get scholarships, because they don't meet the application requirements, no SPM (Malaysian Certificate of Education, awarded to Secondary Level Five students after completing the national examination), or STPM Malaysian Higher Certificate of Education, equivalent to pre-university qualification) results, so they have to apply for PTPTN (education loan provided by government). (C4A1)

According to the findings, including the responses provided by CAs from VET institutions and representatives from MOE, the problem of VET-LSEG students in getting scholarships was mainly due to the fact that most scholarships in Malaysia are awarded based on academic merit, and students with skills certifications could hardly meet the requirements to even apply for the scholarship, let alone obtain it. Thus, the discrepancy between the scholarship system and the preference of VET-LSEG students suggests a flaw in the scholarship awards. The discrepancy also suggests a need for

government and related organizations to review the terms and requirements of scholarships in the country.

In view of the significant relationship found between financial assistance and students' aspirations for HE, the relationship between financial assistance and students' aspirations for employment was also assessed for comparison using Pearson product-moment correlation coefficient.

Thus, the Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The result showed that there was a negative but non-significant correlation between the two variables, ($r = -0.15$, $n=120$, $p>0.05$), with high levels of financial assistance associated with low level of aspiration for employment (see Table 4.8).

Table 4.8 *Pearson's Product-Moment Correlations for Financial Assistances with Aspiration for Employment*

Variables	M(SD)	Financial Assistances	Aspiration for HE
Financial Assistances	13.33(1.73)		-.15
Aspiration for Employment	4.98(1.69)	-.15	
N=120. $p>0.05$			

Though the relationship between the financial assistance and students' aspiration for employment was non-significant, with $p>0.1$, the overall results did provide the indication that, when financial assistance was easily available, VET-LSEG students showed less intention to seek employment after completing their VET studies, and higher aspiration to continue for HE studies.

The results provide evidence for this study to suggest that VET-LSEG students' aspirations for education are motivated by availability of financial assistance. When financial assistance was available, students were more motivated to pursue HE, whereas when the financial assistance was not available, students were motivated to pursue employment. These conclusions are illustrated clearly in one of the student's response,

After completing my programme here, I think I want to work and save money first then I will continue to study for higher education. But, if I can get scholarship and, err, like (living) allowance, then I will continue to study, otherwise, I have to work first, save some money then only continue to study. (C1S3)

On another hand, the results also imply the flexibility of aspirations. Students showed high aspirations for HE but have also planned for employment, as illustrated in a response by one of the students,

I plan for both, to work and also to continue study, depends, if I get to study after completing my diploma, I will study. If I don't get to study, I will work.....: If possible, I would want to continue to study immediately after this course, I really don't want to work yet. (C4S3)

The flexibility in students' decisions again showed that they embraced the adverse situation caused by their financially disadvantaged backgrounds. The results also suggested students' understanding about their chance of obtaining HE increases with the availability of financial assistance. The results also indicate the students' maturity in embracing the fact that they will need to work if they do not get the required financial assistance to continue their studies. With these in mind, it is thus important to note that the start of employment among the VET-LSEG students does not indicate the end of students' aspiration for HE. As suggested in the findings of this study, students who believed they would have financial problems enrolling for HE immediately after completing VET, actually planned to work first and return to study later, especially when they were financially ready. This finding is clearly illustrated in the following statement collected from one of the student respondents,

But, it will be better if I can get scholarship, otherwise (paused), just like I said earlier, I should work first, and to continue study later, with my own savings. (C1S1)

In this regard, most CAs from VET institutions were also found to share the same observation about their students. Especially those students from poorer background who were found to have a stronger inclination to plan for employment first, usually also plan

to study later according to these CAs. The typical response is captured in the following statement by one of the CAs,

....sometimes when we talked to some of our students, they told us that they would want to work first, and continue their studies after 3 or 4 years....For students who are from poorer families, they usually want work first, maybe for 3 or 4 years, then they will go back to study. (C5A1)

The students' preference to work first and study later also indirectly implied the influence of opportunity costs. Students understand they can contribute financially if they work instead of studying. The implication is clearer in students' responses during the interviews, as responded this student,

..because, like right now, my mother is the only person working (in my family), so I don't want to burden her (financially), (long paused), I think she also prefers that I go out to work first, though I think I should study more so that I can get better job later. (C3S5)

In this regard, most CAs from VET institutions also shared similar view to the students, where most of them indicated that the students from poorer families should work after completing their VET studies in order to take care of the immediate financial needs of the family. According to these CAs, these students could come back to study when their financial situation improved. In addition, these CAs also believed that the VET-LSEG students could actually get good employment after completing their VET studies. The confidence of CAs in students getting good employment and improving their financial situation illustrated in the statement provided by one of the CAs,

Like our students who studied vocational courses with us in the past, they could start their own business, now government looks more into skills now, which provide the students with more chances, and help them to progress even further, especially in terms of getting employment and building career. (do they get better employment?) hmm, yeah, some of my students actually get higher salary than mine! Those are the students who work overseas like in Dubai, working with companies like Shell, they get very high salary! Like those welding work, yeah, depends on the students too, like how much effort they put in to get a job, if they just sit around and wait for opportunity, they usually end up being an office boy, or clerk. Most students can get a job, if they searched hard enough. (C1A2)

It is also important to note that these CAs not only believed that students could get good employment and high salaries after completing their VET studies, but they also transmitted this belief to the students. In this regard, not only did the CAs admit telling students about the possible work opportunities and high earnings, but the students also commented on being told about similar information by the school counsellors and teachers. This finding raised concern that, in addition to their financially disadvantaged background, the students' aspirations for employment could also be inspired or coerced by the school counsellors or VET teachers. Thus, the influence of the school counsellors and teachers at the VET institutions was investigated further. The investigation process and analysis are detailed in the later section titled 'Social Influence'.

Summary of FD

The outcomes conclude that FD is still a significant factor affecting VET-LSEG student's progression to HE. The outcomes show that although FD posed little effect on students' aspiration for HE, the presence of FD caused significant barriers to students' opportunities to participate in HE. The outcomes also suggest that students' aspiration should not be dismissed due to their inability to progress to HE immediately after completing VET studies. The results suggest that students delay progression due to their financially disadvantaged background, and show strong potential to return for HE when they are financially ready. The results also suggest a flaw in the financial assistance system in Malaysia, which provides easily accessible financial assistance but is not accessible by the VET-LSEG students. The next section presents the investigations of the *Family Background* of VET-LSEG students.

Contributing Factor 2-Family background

The investigation on family background in this study focused on the educational and professional achievements of the parents or formal guardians of the VET-LSEG students. The findings are summarised in *Figure 4.2*.

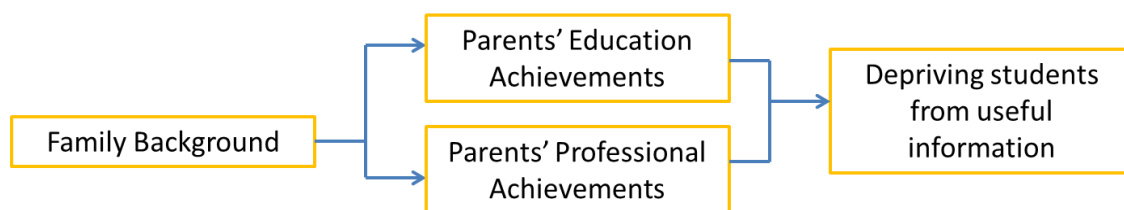


Figure 4.2 Summarised Findings about Family Background

The parents' educational achievements were estimated through students' responses to their parents' highest education level in questionnaires (Item BP4 and BP5) while the parents' professional achievements were estimated using the household income in questionnaires (Item BP6) and parents' occupation suggested by students' and CAs during interviews. The data collected from students through questionnaires and interviews were compared with data collected from CAs through questionnaires and interviews for triangulation.

Education achievements of parents

The parents' educational achievements were first assessed based on two categories, higher or tertiary level education through universities or university colleges, and non-tertiary level education includes secondary school levels and skill training and below. The education achievement of father and mother was examined separately. According to students' responses in questionnaires, 28% of students' fathers had higher or tertiary education qualification and 72% students' fathers had no tertiary or higher level education qualifications achievement. For mothers, only 27% had tertiary qualification, and 73% had either primary or secondary school or skills certificates. The summarised results are provided in Table 4.9.

Table 4.9 *Parental Academic Achievements (N=120)*

Highest Qualifications	Father (%)	Mother (%)
Tertiary Qualification	28	27
Non-Tertiary Qualification	72	73

Of the fathers without tertiary qualifications, 17% completed only primary school (Grade 6 equivalent), 10% had skills certificates, 12% completed junior secondary school (equivalent Grade 9) and 61% completed secondary five (Grade 11 equivalent). Among the mothers with no tertiary qualification, 17% completed only primary school, 3% had skills certificates, 16% completed junior secondary school, and 64% completed secondary five. The results are summarised in Table 4.11.

Table 4.10 *Parental Highest Non-Tertiary Academic Achievement (N=120)*

Highest Level of Education	Father (%)	Mother (%)
Primary School	17	17
Junior Secondary (Grade 9 equivalent)	12	16
Senior Secondary (Grade 11 equivalent)	61	64
Skills Certificates	10	3

The responses suggested that most parents were without an HE background. In this regard, CAs generally agreed that most parents of the VET-LSEG students completed education only up to secondary school level, and only very few would have certificate or diploma level qualification, HE like Bachelor degree level qualifications were rare among the parents of VET-LSEG students. The typical response from CAs is as follow,

As for the background of the parents, some of them are educated, maybe some of them are not...like....some of the parents work as police, or lecturers, and err..... some of them, err...maybe put it this way, like 70% of them are educated up to secondary schools. (C4A1)

Professional achievements of parents

The parental career type was estimated based on CAs' (from VET institutions) responses about parents' career types. According to the CAs, the occupation of students'

parents could vary from doing agricultural activities like farming and rubber-tapping to running small business like a grocery stall or driving a taxi. Though CAs could not provide confirmed statistics of parent's professions due to data confidentiality, they did confirm that most parents were involved in hard-labour work and lower-level job positions. The following statement shows a typical response provided by CAs,

I think they are mostly SPM (senior secondary), some of them are, if they are from kampong area, mostly they don't even have SPM, and from my group, mostly they are from lower, lower income parents.....Yeah, yeah, fishermen, farmers, buruh kasar (hard-labour) or taxi driver, some of them had never even been to school. (C1A1)

The lower level and hard-labour jobs described by CAs were found to align with the parents' income levels indicated by students in questionnaires, Item BP6 from Background and Profile section, where less than 10% students responded to have come from a family with a monthly household income higher than the national average household income. More than 50% of respondents come from family with monthly household income less than RM3500 (approximate USD880) per month, which was only about half of the national average household income at RM6141 (approx. AUS1600) in year 2014 (Department of Statistics Malaysia, 2015). The claim was also in consistent with the students' responses provided during interview, where most students' parents held varieties of profession including farmers, factory workers, policeman and teachers, and earn monthly income less than RM6141.00.

Family background and barriers to HE

The impact of parents' education level on students' aspirations for HE was assessed. In order to do this, Two-Ways ANOVA was conducted to explore the impact of the education achievement of father and education achievement of mother on students' aspiration for HE. The education achievements of both fathers and mothers were divided into five groups according to the highest level of education achieved (Group 1: Primary School; Group 2: Secondary School-PMR(Junior); Group 3: Secondary School-SPM(Senior); Group 4: University or college; Group 5: SKM (Skills)

or other VET qualification). The results show that the interaction effect between education achievement of father and education achievement of mother was not statistically significant, $F(10, 101)=0.47$, $p=0.91$. The main effect for education achievement of father $F(4,101)=0.18$, $p=0.95$ did not reach statistical significance and the main effect for education achievement of mother $F(4,101)=0.73$, $p=0.57$ also did not reach statistical significance. The results are summarised in Table 4.11, and full analysis is illustrated in Appendix 15.

Table 4.11 *Two-Way ANOVA of Aspiration by Parents' Education Level*

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Father's* Mother's Edu Level	10	7.69	.77	.47	.91
Father's Edu Level	4	1.20	.30	.18	.95
Mother's Edu. Level	4	4.79	1.20	.73	.57
Error	101	1.64	1.64		
Total	119	195.30			

Note. N=120, df=degrees of freedom, SS=Sum of Squares, MS=Mean Square.

The results suggest that students' aspiration for HE generally is not significantly affected by either the education achievement of the father or the mother, or both of them together. The result contradicts the literature that suggested a strong positive link between parents' educational achievement and students' aspirations, for example, Otto (2000) and Nor, Roslan, Mohamed, Hassan, Ali, & Manaf (2011). The findings suggested no significant association between students' aspirations and the educational achievement of parents. The interview findings indicated a possibility that students' aspirations for HE were actually inspired by the lower academic and professional achievements of their parents or older family members. As a result, students wanted to attain HE or higher level qualification so that they could attain higher achievement. The response provided by one of the students described the general sentiments among these students,

I wish to continue my studies in university. (Why?) Because none of my family members has attended university, so I hope I could be the first one to get admitted and study in university. Besides, employment opportunity is higher, and higher salary, that's why, need to study (HE). (C2S4)

The interview data collected from VET-LSEG students also suggested that students were not easily affected by their parents' professional choices nor by their parents' advices. The following statements by one of the students describes the situation,

After this (VET), I would like to work, work for one or two years first, save some money then will continue to study. Though my parents do advise me to study, but I would like to work, to earn money. (C5S2)

This finding suggested that students seemed to show more maturity and capability in analysing their own situations and making decisions according to their own desire. This is in contrasty to studies like Mujis (2007) which suggested that students' aspirations were easily influenced by parents' academic achievements, but on the other hand, the findings were consistent with studies like Bowden & Doughney (2010) and Sulaiman et al. (2012) who disputed that students' aspirations could be easily influenced or affected by low academic achievements of parents.

In term of parents' capability in exposing students to information about and opportunity for HE, this study found that parents with lower education attainment seemed to face more challenge and felt less capable in exposing students to the relevant opportunities that could help them in attaining HE. The situation was explained in the following statement recorded from one of the CAs,

....we are invited to talk to students in schools, giving information about courses to students, some schools invite parents to attend the sessions with their kids, during the conversations with parents, I realised most parents are not aware about the government's transformation programme (to improve participation in higher education), so, if the schools have not involved the parents, those parents will never find out about the supports and opportunities available to their kids, because they are mingling with people at their own level, they are not socialising with other people that can share useful information about university studies, so there is no way they can get information about these opportunities and supports (to obtain higher education). (C4A1)

Summary of family background

In general, the findings in this section show that students' aspirations were not negatively affected by parental education and professional achievements. In some cases, students' aspirations were actually inspired by the low academic and profession attainment of parents and older family members. The responses do show, however, the possibility that parents who have no exposure to or no experience in studying HE can be a possible factor depriving students from useful information about the availability of opportunities and assistance for HE, which indirectly affected their opportunity to participate in HE. The next section presents the investigations of the *Low Confidence* factor.

Contributing Factor 3-Low confidence

The impacts of VET-LSEG students' confidence on their aspirations for HE and opportunity to participate in HE were investigated in this section. The findings are summarised in *Figure 4.3*.

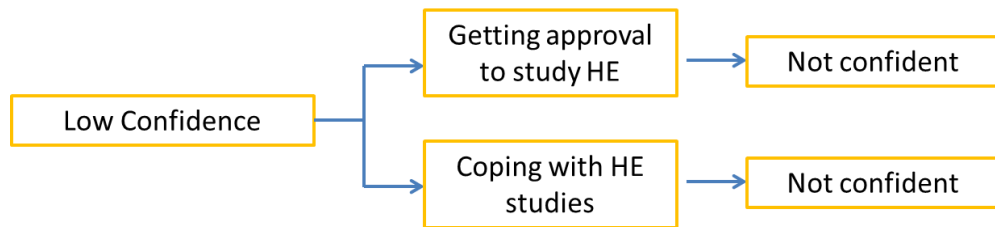


Figure 4.3 Summarised Findings about Low Confidence

Before the impacts of the students' confidence could be examined, the students' confidence level, in their VET studies and previous education achievements were first assessed. The students' confidence was assessed using data collected through questionnaires, under the Knowledge and Skills (K&S) section.

Students' confidence about VET knowledge and skills

Students were asked to respond using Likert scales about the knowledge and skills obtained through VET studies. The initial frequency counts on Item KSa (Trained with basic knowledge & skills) showed that, 93% students agreed that they were trained only with basic knowledge and skills with their current VET studies. When students were asked if they were trained with sufficient knowledge and skills in their current VET studies under Item KSb (Trained with higher level knowledge & skills), 72% students agreed that they were trained with sufficient knowledge and skills and only 5% disagreed and 23% remained Neutral. In response to Item KSc (Trained with sufficient knowledge & skills) where students were asked if they were trained with high level knowledge and skills in their current VET studies, 69% agreed and only 2% disagreed that there were trained with higher level knowledge and skills, and 29% stayed neutral in opinion (see Table 4.12 for details).

Table 4.12 *Descriptive Statistics for Knowledge & Skills (N=120)*

Items	Agree (%)	Disagree (%)	Neutral (%)
KSa-Trained with basic knowledge & skills	93	1	6
KSb-Trained with higher level knowledge & skills	69	2	29
KSc-Trained with sufficient knowledge & skills	72	5	23
KSd-Trained with employability skills	94	1	5
KSe-I need higher knowledge & skills to work	83	1	16
KSf-I need higher knowledge & skills to be competitive	92	0	8

In general, the findings suggested that students seemed happy with the VET studies in which they were enrolling. In this regard, students believed that VET provided them sufficient knowledge and skills in the field which they were enrolled to be trained. On the other hand, the students were also found less confident with the knowledge and skills they obtained through VET, which they described as only basic and lower level knowledge and skills. This seemingly contradictory view demanded that the confidence

level of VET-LSEG students towards their VET studies be explored further via interviews.

During interviews, students were first asked to comment about the VET programme which they were enrolled. Students generally responded positively about the VET programme that they were enrolled in and believed that they were learning what they were supposed to learn under the programme. The responses showed that students seemed to have a certain perception about the knowledge and skills they were supposed to learn through the VET programmes, and were generally happy with what they were learning. This satisfaction with VET programmes found in VET-LSEG students suggested students' satisfaction with their VET studies, which was in consistent with the findings derived through questionnaires, and also with findings presented in literature like O'Shea et al. (2010).

The students also showed confidence that they could benefit through studying the VET programme which they enrolled in, even in acquiring more than necessary knowledge and skills than they were supposed to learn through the programme. The following statements from students' typical sentiment,

I think it is very good, because everything is in order within the programme, like, in third year we will get further training, in the fourth year, we will get training in the industry, I think yes. (C1S3)

Yes, it can improve my way of thinking, to be more open minded, and I have learned new knowledge, things I didn't know before. (C4S3)

Besides, most students also show confidence that their VET certification can get them employment easily, such as,

Err, I think with the skills, that help me to get a job easier, yeah, I can get job based on my skill. (C1S3)

I think it is okay, we have learned all the basics, so it is enough to work.
Err.... I think I can, with the skills providing here, I think I can get a proper job. (C3S5)

Though students were generally confident with the VET programme, they had actually shown some doubt about the level of knowledge and skills obtained, which most students referred to as 'basic' or 'ordinary'. Some students, for example, said,

The things that we learn are not in depth, very 'standard', very basic (C2S4).

Hmm...I think what we learn here is not enough, especially to work higher level job. Besides, with a diploma, I can only work as low level staff, that is not what I want to do, not my ambition, I want better job and better salary. (C4S2)

The students' lower confidence in the level of knowledge and skills acquired via the VET programme was further examined through their confidence and perceptions in getting good employment and opportunities for HE.

The data showed that, though students believed that they could get employment with VET certification, they were not optimistic about the type of job possibly obtained. Most of them expressed that VET could only enable them to obtain a low level job, with responses such as,

Yes, I should be able to get a job, but might not be 'ideal', maybe just job with low salary, not high position, like, just 'ordinary' worker. (C2S4)

Hmm...Jobs will be available, but good employment ...not sure if I could get good employment, but, earning money is definitely possible. (C5S2)

Students' confidence and barriers to HE

Students were not only optimistic about the type of job that they could possibly obtain after completing the VET course, most of them were also sceptical about their opportunity to participate in HE, especially in getting an admission offer from public funded HE institutions for HE studies in Malaysia. This lack of confidence among VET-LSEG students was further explored during the interviews and three major reasons were discovered.

First, students were concerned about the creditability of their newly upgraded and implemented vocational diploma. In this regard, students were unsure if the new diploma was acceptable by HE institution as an entry requirement for HE studies, especially in view that the vocational diploma was not being officially included as one

of the MQA listed entry requirements for HE studies in Malaysia. The following two statements collected from students explained the sentiment,

I want to study, until university level, but I am not sure about our (VET) diploma, we haven't seen anyone applied successful using this (Vocational) certificate (to continue study), so, I am not sure what I can do after this, yeah. (C1S2)

I think it is definitely difficult for us to apply to study at university, because our vocational diploma has just been developed, it has just started, so definitely it is difficult for it to be accepted by university. (C1S4)

Second, students were not confident with their ability to cope with HE studies. In this regard, most students believed the HE studies, especially the teaching and learning styles, were different from the VET programme and also more difficult to manage. In the following statements, students describe the typical responses,

Whatever we do here are at basic levels, very easy to complete, but those in university must be very difficult, because there are at higher level and more to learn, hmm.... I don't think I will like it very much. (C2S4)

I might have problem coping with the studies, because I am kind of slower learner, I need to learn slowly and step-by-step, but at university, we might face a lot of competitions, competition with students from SPM, very high possibility these students are smarter and faster in learning, so that might cause difficulty for me to study together with them. (C4S2)

Third, students were not comfortable with their lack of academic qualifications that were necessary to meet the entry requirements for HE studies, especially the SPM and STPM that were listed as formal entry requirements for HE studies by MQA. The following statement from one of the students describes the concern,

Not sure, I worry actually because I am not sure if our diploma can be recognised or not, like by the universities or by the companies out there if we were to look for job, because we have no SPM.... so, I am not sure what I can do after this, yeah. (C1S2)

These students' concerns explained their lack of confidence in the VET programme which they were enrolled, and also in the VET certification which they were about to receive upon completing their VET studies. Despite acknowledging the various

concerns, however students still strongly aspired to pursue HE. The students strong aspiration for HE was once again underlined when they were asked if they would still apply for HE despite the problems and concerns expressed, especially about their lack of eligibility for HE studies and lack of necessary knowledge and skills in getting admission for HE studies. Of the six students interviewed, all students replied with confidence that they would still want to pursue HE after completing their VET studies.

I want to study. I want to get a (Bachelor) degree, but I am not sure, because we are the first badge of (vocational diploma) students, this diploma has not been made 'famous' yet, we haven't seen anyone with this diploma get admitted into university (for HE studies), so, I am not sure...yeah. I will apply (for admission to study HE), but I am worried too that I will not get offer (to study). Yeah, but I will try. (C1S2)

The findings suggested that VET-LSEG students aspired to HE despite their lack of confidence in meeting the entry requirements and possible lack of capability in coping with the studies. This finding reinforced and confirmed the strong aspiration found among VET-LSEG students reported in the earlier section.

Students' aspirations were found not significantly affected by their low confidence. This low confidence on the other hand affects their participation in HE, especially their persistence in completing their studies successfully after getting admission to HE studies. In this regard, a couple of CAs were found raising the concern that VET-LSEG students might not have the required confidence and mentality to cope with the academic studies in HE, and these characteristics might eventually cause them to drop out from HE studies, especially when they failed subjects or assessments while doing the HE studies. The following statement from one of the CAs explained the sentiment,

Maybe not (being able to cope with HE studies), like they, I don't they are not confident that they can do this (HE studies), I worry that they might drop out because of not being able to pass. (C2A1)

Other CAs had not raised similar concern about students' low confidence but the comment provided by these two CAs highlighted the issue for further consideration. In this regard, the students' confidence was raised for exploration again while examining

the education system and case study, especially in identifying existing strategies implemented to help boost the students' confidence level in coping with HE studies. The students' confidence was also highlighted to be included later in the discussions of recommending strategies to help VET-LSEG students in attaining HE successfully.

Summary of low confidence

In summary, the findings showed that VET-LSEG students were happy with the knowledge and skills obtained through VET studies, but were not confident that the qualification and knowledge and skills obtained through VET could enable them to attain admission approval to study HE or better career development. This finding confirms the gap between the VET and HE skills, and the difficulty in bridging this gap through VET qualifications alone. This finding is consistent with O'Shea et al. (2010) who claimed that "While the participants saw value in their previous vocational studies, this value-add was not necessarily acknowledged within the university sector" (p. 7).

Despite the low confidence, students still aspired to HE. In this regard, students were found being adamant about progressing to HE studies despite acknowledging their lack of confidence, and the problems causing their lack of confidence. This finding reinforces the outcome of strong aspiration among VET-LSEG students derived through the Quantitative Phase study in an earlier section.

Although students' aspirations to HE were not affected by their low confidence, their opportunity to attain HE was affected by their low confidence. In this regard, the students were found to face a high risk of dropping out from HE studies due to their low confidence. This finding is also consistent with Schindler & Reimer (2011) who found VET-LSEG students to be generally "less optimistic about their prospect to succeed in higher education" (p.265), which eventually caused them either not progressing for HE studies or drop out early from HE studies. The next section presents the investigations of the *Social Influence* factor.

Contributing Factor 4-Social influence

The impact of social influences was investigated in term of influences caused by school peers and other social acquaintances of the VET-LSEG students. The findings are summarised in *Figure 4.4*.

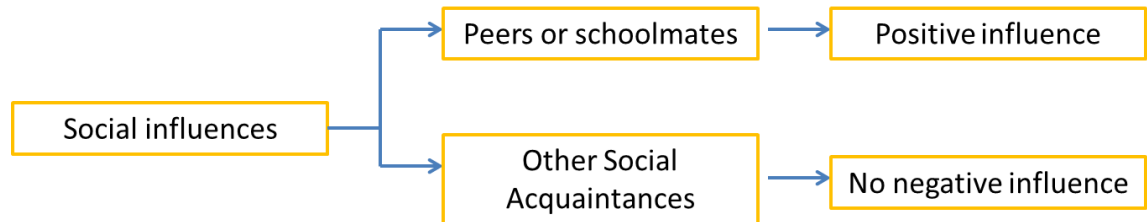


Figure 4.4 Summarised Findings about Social Influence

In order to assess the impact of social influence, the students' responses collected through questionnaires were first examined. The frequency count on Item DFb detailing peers discouragement under Discouraging Factor showed that only 22% of students agreed that they could get influenced by peers discouragements, whereas 54% of students disagreed and 24.2% remain neutral in opinion.

Though more than half the student respondents disagreed that they could be influenced by discouragement from peers, but the 21.6% agreement rate and 24.2% neutral rate were sufficient to warrant the need of further investigation about the significance of the impact of peers' influence, especially on students' aspiration for HE.

Social influence and barriers to HE

The impact of peers' discouragement on students' aspiration for HE was investigated using a One-Way ANOVA. In the ANOVA test, participants were divided into five groups according to their perception of family and peers' discouragement (Strongly Disagree, Disagree, Neutral, Agree and Strongly Disagree). There was no statistically significant difference at the $p < 0.05$ level in the aspirations for HE for the five response groups: $F(4,115) = 1.57, p = 0.19$. The students' response suggested that there is no difference in aspirations of students in different perceptions towards

discouragements from peers or other social discouragement. The full analysis is presented in Appendix 16.

The findings suggested that there was no significant impact of peers' discouragement on students' aspiration for HE. This not significant impact of peers' discouragement on students' aspiration was further investigated during interviews.

During the interviews, the impact of peers' educational achievements was first explored. Students were asked questions about the peers' general educational achievements, and whether their own aspirations were affected by their peers' aspirations. The responses suggested that:

- Students with high aspiration do not necessarily have friends with a strong desire to further study.
- Students with a stronger preference to work do not necessarily have friends with low aspirations for HE, some of the students even have siblings or relatives studying in university.
- Students' do not see peers' educational achievements as a significant factor affecting their aspiration or decision for HE.

These findings suggest that students' aspiration for HE was generally not affected by peers' influence. The findings showed that not only students' aspirations were not affected by peers' influence, but their desire to pursue HE was also not discouraged or daunted by the less satisfying education experiences or low education achievements of peers. The following statement describes the situation,

Yes, my mummy has always encouraged me to continue my studies if possible because none of my siblings or friends has a university degree, like my cousin went to uni but didn't complete her studies. (Why did she drop out?) Don't know, maybe bored with the studies? (Chuckled) That's why my mum suggested that I should work hard to get into uni, and if I could get into uni I must also work hard to complete my studies. (C2S3)

Students' aspirations were found not to be discouraged by peers' influence, rather, the students' aspirations were actually motivated by the disadvantages suffered by friends that had low education achievements. Students were identified determining to

pursue HE so that they could avoid the hardships and disadvantages encountered by peers that had no HE qualification. The following statement from one of the students explained the situation,

Yes, I can definitely get better career with university qualification, because our seniors (previous VET students who did not progress for HE) told us to better to continue to study because the vocational certification is not sufficient, and those companies out there, they don't really recognise a (vocational) diploma, not just a diploma, they want workers who have high qualification, better knowledge and more efficient skills. (C4S2)

Summary of social influence

Overall, the findings suggest that aspirations of VET-LSEG students were not negatively affected by peers' influence. Rather, students were motivated by their peers' disadvantages caused by low educational achievements. Thus, the social influence is not a significant factor discouraging the students' progression to HE, but a significant factor motivating students' intention to participate in HE. This finding is in contradict to studies like Schindler & Reimer (2011) and Overman (2002) who suggested that aspiration of students with LSEG background tended to be easily discouraged by peers and neighbours with low educational attainments. The next section presents the investigations of the *Culture* factor.

Contributing Factor 5-Culture

The literature suggested the LSEG students generally live under a cultural influence that causes their negative attitudes and less interest in HE. Since it was established in earlier sections that the respondents in this study are with LSEG background, it was important to investigate if these students were also negatively influenced by their culture, and as a result showed low aspiration and less interest in HE. In order to do this, the responses in questionnaires were investigated. The findings were then compared with data collected from interview and case study. The study outcomes about Culture are summarised in *Figure 4.5*.

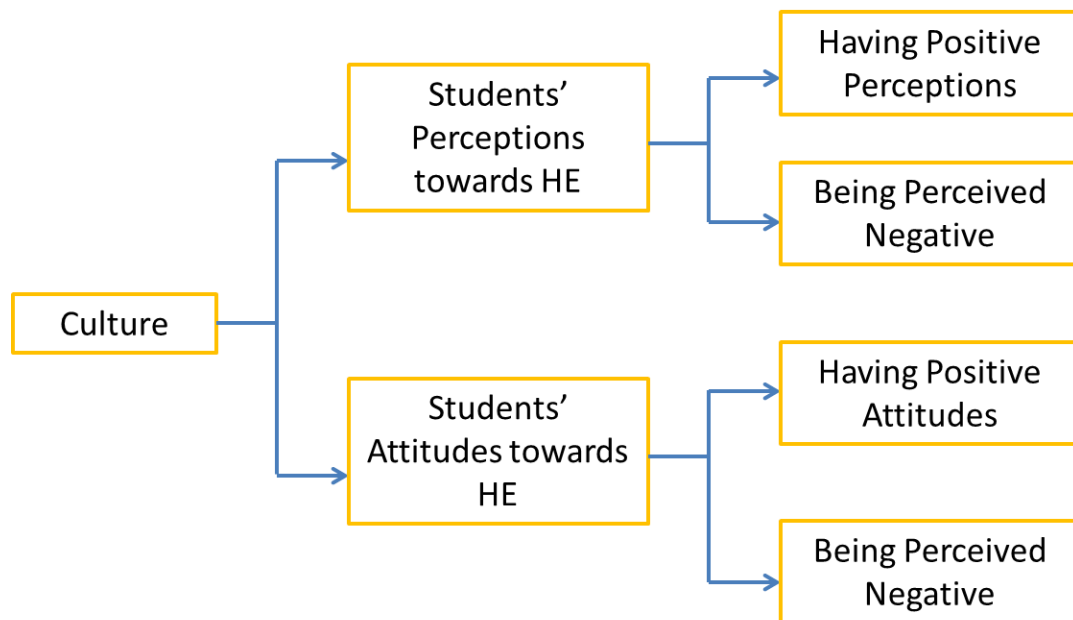


Figure 4.5 Summarised Findings about Culture

Perceptions and attitudes towards HE

The literature suggested that cultural values and beliefs arising from LSEG backgrounds caused students to have low aspiration towards HE. According to prior research, these students usually perceive HE as irrelevant and unbeneficial which subsequently leads to negative study attitudes and lack of interest in pursuing HE. Since it was established in earlier sections that the student respondents were from LSEG backgrounds, it was important to examine if the VET-LSEG students in Malaysia suffered the same cultural influences that caused a lack of interest and negative attitudes towards HE. The investigations involved two stages. Firstly, students' attitudes towards HE was examined, followed by their interest in HE.

In order to investigate the students' attitudes towards HE, the data collected through from questionnaires-Item 'DFd-HE is not important and beneficial' were first explored. Under DFd, students were asked to respond if their aspiration for HE could be discouraged by the general perception about HE being unimportant and unbeneficial. The students' responses showed that only 4% agreed that their aspirations for HE could be discouraged by such a perception, while 83% students disagreed and 13% provided

neutral responses. The high disagreement rate showed that not only did students believe that they could not be discouraged by this negative perception about HE, but the results suggested that students actually perceived HE as important and beneficial (see Table 4.13).

Table 4.13 *Perceptions and attitudes of VET-LSEG students towards HE (N=120)*

Items	Agree (%)	Disagree (%)	Neutral (%)
DFd-HE is not important and beneficial	4	83	13
EFg-Importance and relevance of HE	91	1	8
DFf-Lack of interest in HE	15	66	19

Note. The maximum score is 100

For comparison, the students' responses to 'EFg-Importance and relevance of HE' was also examined. Under EFg, students were asked if their aspiration for HE could be motivated by the general perception about HE being important and relevant. The frequency counts showed that 91% students agreed that their aspiration for HE could be motivated with the positive perception, only less than 1% disagreed and 8% provided a Neutral response (see Table 4.14). The high agreement rate suggested VET-LSEG students' positive perceptions towards HE, which was consistent with the findings derived through Item DFd earlier.

The impact of students' positive perception towards HE was tested using One-Way ANOVA. In this regard, the responses for EFg were tested against students' aspiration for HE. The results showed that there was a significant difference at the $p < 0.05$ level in aspiration for HE for the five response groups: $F(3,116) = 22.89$, $p < 0.01$. The effect size was considerable, with an eta squared-value 0.37. Thus, the result suggested that EFg- Importance and relevance of HE (the importance and relevance generally perceived in HE) actually caused a significant impact on VET-LSEG students' aspirations for HE. The significant impact of EFg on students' aspiration again confirmed students' appreciation of HE, which also represented students' good perception and attitudes towards HE. The analysis results are summarised in Table 4.14 and the full analysis is illustrated in Appendix 17.

Table 4.14 *One-Way ANOVA of Aspiration by EFg-Importance and Relevance of HE*

Source	df	SS	MS	F	P
Between groups	3	72.62	24.21	22.89	.00
Within groups	116	122.68	1.06		
Total	119	195.30			

The positive attitudes of students towards HE were confirmed during interviews. In this regard, all students referred to HE as important, beneficial and relevant to their needs. However, though students perceived HE positively, not all students referred to HE as essential. Out of the twelve students interviewed, nine of them referred HE as necessary. In general, the responses from students showed that:

- Although not all students believed HE was necessary for success, all of them believed that their lives could be improved by HE to a certain extent, for example, getting better job opportunities and better salaries.
- Although not all students believed that they would need HE to get a decent job, all of them believed that they would need HE for better career development.

Most students believed that HE could improve their knowledge and provide them the better skills that were essential to work and a successful career. The following statement illustrates the typical comments provided by students, about their perception of HE,

...because the scope of my course here is not as wide, and I definitely need higher education so that I can get sufficient knowledge and skills to work. With what we learn from here (VET), we are still like a baby, trying to walk, but with higher education, I can improve my capability. (C4S2)

Many students also believed that HE could improve the quality of life, as this student has commented,

Yes, it (HE) is very important to me. I think it can help me to improve the quality of my life. (How?) Hmm, like improve my chance to get job, can

improve my life style, and can also expand my social circle, because in here, we don't have much social interactions, very quiet. (C2S4)

Some students also referred to HE as a life target which their parents wanted them to achieve. The following statement from one of the students explained the sentiment,

Hmm, I get to learn new knowledge. I am sure my parents will be proud of me too, because I think that is what they hope I could achieve (paused), and maybe, maybe (with HE) I can be more successful. (C1S2)

The findings suggest that VET-LSEG students perceived HE as important and relevant, which is consistent with the outcomes derived through questionnaires data, about the students' positive attitudes towards HE. This also signifies a positive view of HE, which indicating changed cultural values towards HE among the VET-LSEG students and families.

Conversely, CAs from VET institutions seemed to have different view about students' attitudes towards HE. In term of perception toward HE, the CAs believed that most parents and students understood the importance and benefits of HE. In term of aspiration for HE, most CAs believed that students, especially those from poorer household, though understanding the importance of HE usually preferred to work after completing their VET studies instead of continuing to HE. The following statement from one of the CAs illustrate the typical comments from CAs,

I think it depends on individuals, I believe parents usually want their children to attain HE, but sometimes when we talked to some of our students, they told us that they want to work first, and continue their studies after 3 or 4 years....for students who are from poorer families, they usually work first, maybe after 3 or 4 years they will go back to study. (C5A1)

The contradicting view about students' perception of HE between CAs and VET-LSEG students demanded that the subject needed to be explored further. In order to do this, the students' responses to 'DFf-Lack of interest in HE' were examined and the outcomes were derived for comparison.

Under Item-DFf, students were asked if lack of interest was a significant factor discouraging their aspirations to pursue for HE. The initial frequency counts showed that only 15% students agreed that the lack of interest was a significant factor discouraging

their aspirations for HE, while 65.8% students disagreed and 19.2% students provided neutral responses (see details in Table 4.14). The low agreement rate suggested that the strong interest of VET-LSEG students in pursuing HE, which indirectly also suggested students' positive attitudes towards HE. The high disagreement rate also disputed the claim that LSEG students usually showed less interest in pursuing HE. The students' high aspirations for HE and their strong desire to pursue HE established in earlier section, Aspiration and Opportunity to Participate in HE, also indicated the positive attitudes towards HE found in VET-LSEG students.

Though CAs did not dispute the strong interest for HE found in VET-LSEG students, they did express concern about their students' less satisfying attitudes towards classroom and academic learning, which they described as a potential hindrance for these students to be successful in HE studies. The following statement explained the sentiment,

They just wouldn't do it (HE), because they have no interest (in theoretical learning)...how could we teach them if they have no interest to study? Some of them even sleep in class, if you forced them to study, they would just leave the classroom... not all of them, but many of them....but these students are actually good in skills work, they can perform when there work in the workshops..... if you tell them to do skills work, they can spend three hours happily doing the tasks, but if you tell them to study, to read, they wouldn't last, even for 30 minutes. (C1A2)

Section Summary

In summary, cultural factors were found affecting students' aspiration to a certain extent. In term of perceptions and attitudes towards HE, VET-LSEG students were found showing positive perceptions and attitudes towards HE. These positive perceptions and attitudes were found to have contributed to students' strong aspirations for HE and strong desire to pursue for HE after completing their VET studies. In this regard, the negative cultural belief and perceptions towards HE were found not significantly affecting the students' aspiration for HE. To the contrary, the positive attitudes and perceptions found in VET-LSEG students suggested a change of cultural values and beliefs towards HE in Malaysia.

The positive perception found in VET-LSEG students is contrast to other studies such as Plowman (2006) and Maschinot (2008) that suggested LSEG students usually showed negative attitudes towards HE due to their adverse backgrounds. The strong interest for HE found in VET-LSEG students also contrasted with literature, like Tamuri et al. (2005) and Shariffuddin et al. (2014), that claimed LSEG students usually showed less interest in HE. However, it is important to note that such positive perception and attitudes of VET-LSEG students were not supported by CAs from VET institutions. According to the findings, CAs generally believed that VET-LSEG students had less desire and less interest in participating in HE. There was no further evidence to confirm the CAs' claim but in view of their close relationship with the students and also their familiarity about the students' attitudes and mindsets, these CAs' views were still noted and taken into consideration. The next section presents the investigations of the *Education System* factor.

Contributing Factor 6-Education system

The literatures reviews in Chapter 2 revealed that the main education system related barrier encountered by VET-LSEG students was the lack of progression opportunity. In this regard, the lack of progression opportunity was found affecting not only the aspiration of the affected students but also their actual opportunity to participate in HE. In view of this, the impact of progression opportunity on VET-LSEG students' aspirations and opportunities to participate in HE in Malaysia were investigated and analysed.

Progression Opportunities (PO)

The PO was investigated in term of availability of progression pathways. The impact of PO on aspirations of VET-LSEG students were first analysed using data collected through questionnaires.

Progression opportunities and aspirations

The students' responses to Item DFh (Lack of progression pathways to HE) were examined, and the results showed that 31% students agreed that the lack of progression pathways was indeed a factor discouraging their aspiration for HE, while 43% students disagreed and 26% provided a neutral response. The initial frequency counts suggested mixed views of students on the impact of progression pathways.

A one-way ANOVA was conducted to test the impact of lack of progression pathways on students' aspirations. The result showed that there was a non-significant difference at the $p < 0.05$ level in aspiration for HE for the five response groups: $F(4,114) = 2.151$, $p = 0.079$. The results are summarised in Table 4.15 and the full analysis is provided in Appendix 18.

Table 4.15 *One-Way ANOVA of Aspiration by PO-Lack of Progression Pathways*

Source	df	SS	MS	F	P
Between groups	4	13.57	3.40	2.15	.08
Within groups	114	179.89	1.58		
Total	118	193.46			

The findings showed that the lack of progression pathways was not a significant factor discouraging the aspiration of VET-LSEG students for HE. The non-significant impact of the lack of progression pathways was further explored during interviews with students, and consistent findings were found. In this regard, students remained aspired for HE despite acknowledging the possibility of lack of progression pathways.

The students' strong aspiration despite of their knowledge about the lack of progression pathways could be due to their confidence in the government's policies that they perceived to be capable of providing the required supports, especially supports that could help them with their progression after the completion of their VET programme. This is evidenced in the students' responses during the interview where students expressed not only their confidence in government in ensuring their progression once they could complete their VET programme, in this case a vocational diploma. The students also expressed their knowledge about the government's future plans in

establishing vocational universities and VET related HE programmes. The following comment from one of the students explained the thinking,

....it should not be difficult (for VET-LSEG graduates to progress for higher education), (paused), according to our teachers, there are already four universities, four universities that are preparing to accept us (after our completion of vocational diploma), (paused), there are also a lot of other assistances provided by the government, like finance, hostel, just like those students in X University (one of the MARA funded universities in Malaysia), these are all provided to them, so, I believe these will be provided to us too. (C5S2)

Overall, the findings showed that VET-LSEG students were less affected by the lack of progression pathways and showed confidence that the necessary supports would be provided by government in helping them in achieving HE. However, these findings were not in agreement with the opinions and responses provided by other respondents, including the CAs from VET institutions and various representatives from MOE and HE institutions. In this regards, the CAs and representatives indicated that the lack of progression pathways affected not only the aspiration of VET-LSEG students but also their actual opportunity to progress for HE.

The first evidence was observed through CAs' responses to Item DFh (Lack of progression pathways to HE) in the Questionnaires. The initial frequency counts showed that 71% of CAs agreed the lack of progression pathways to HE as a significant factor discouraging the aspiration of VET-LSEG students, and only 6% (equivalent to only one CA) disagreed and 23% CAs provided neutral responses (refer Table 4.16). The high agreement rate signified not only CAs' concern about the impact of lack of progression pathways on students' aspirations, but also signified the significance of the impact on students' progression for HE in Malaysia.

Table 4.16 *Descriptive Statistics of Discouraging Factors (N=120)*

Items	Agree (%)	Disagree (%)	Neutral (%)
DFh-Lack of progression pathways to HE	71	6	23
DFj-Incompatible education & training between HE and VET	65	6	29
DFk-Different teaching styles in HE	65	6	29
DFl-Different assessment system in HE	59	12	29
DFn-Little collaborations between VET & HE to create progression pathways	65	6	29
DFo-Little collaborations between VET & HE to design relevant programmes	65	18	17
DFp-Lack of encouraging government policies	65	18	17
DFq-Unfriendly & discouraging government policies	65	18	17
DFr-Prevented by government policies and education system	59	18	23

Progression opportunities and actual opportunities to participate

The CAs' concern about the lack of progression pathways for VET-LSEG students was further explored during interviews. The findings showed, despite acknowledging the impact of lack of progression pathways on students' aspirations, the CAs showed more concern about the impact of lack of progression pathways on the students' actual opportunity to participate in HE. The CAs concerns are presented in the following discussions. To begin, the CAs were found expressing their concern by acknowledging the lack of progression pathways for VET-LSEG students in Malaysia.

In this regard, all CAs acknowledged that the progression pathways for VET-LSEG students to pursue HE were very limited in Malaysia. According to the CAs, VET-LSEG students were generally not accepted by HE institutions, especially the public funded HE institutions, for HE (Bachelor degree and above) studies in Malaysia.

The typical comments of CAs are illustrated in the following statement collected from one of the CAs,

Usually our students could only go to colleges, like those private colleges, or polytechnics, err (paused), as for the public universities, I don't think they want to take our students. I think they (the public higher education institutions in Malaysia) don't care. Yeah, I don't think they care (to admit VET-LSEG students for high level studies). (C1A1)

The CAs claimed that the lack of progression pathways for VET-LSEG students in Malaysia was generally due to two major reasons. Firstly, it was because of the reluctance of HE institutions in admitting the VET-LSEG students, especially with their less academic and skills focused background. Secondly, it was due to the lack of HE programmes that were suitable for progression of VET students, especially the programmes that could provide them the same field of education in which they were being trained during their VET studies. In this regard, the CAs commented that most vocational programmes were not offered in HE institutions while programmes offered through the HE institutions were usually not suitable for the training background of VET-LSEG students.

However, though progression pathways were limited they were, on the other hand, found not totally inaccessible by VET-LSEG students. In this regard, the CAs commented that limited pathways were still made available to VET-LSEG students, but mostly by private HE institutions like university colleges or technical colleges. Such pathways were usually expensive and accompanied by strict restrictions or conditions. The findings about these limited progression pathways and the accompanying conditions are summarised as follows:

- Pathways are usually offered by privately funded institutions, and the fields of study are also limited to few areas such as the business administration and engineering technology programmes. These progression pathways are made available only for VET-LSEG students who have the relevant qualifications, such as the similar education or training in prior studies. Besides, it is important to note that such progression pathways usually charge expensive

tuition fees which makes it unaffordable and unattainable to VET-LSEG students.

- Limited progression pathways are also available in some public institution and the offer limited to even fewer programmes than those offered through private institutions. According to CAs, the admission opportunity for these available programmes is very limited and only available to VET-LSEG students with good educational achievements in prior learning. Besides, the applications of VET-LSEG students are considered alongside other applicants that progressed through the traditional academic routes, and these candidates are preferred by most HE institutions in Malaysia due to their stronger academic backgrounds. This situation makes opportunities relatively fewer for VET-LSEG students due to their skills and less academically-focused education backgrounds. Although progression pathways are available admission is usually difficult to attain for VET-LSEG students.
- The available pathways usually require VET-LSEG students to do extra courses or a ‘bridging programme’ which takes one to two years to complete. The bridging programme is meant to provide the VET-LSEG students with the academic knowledge which they missed learning during the VET course. The bridging programme allows VET-LSEG students to regain the academic knowledge and skills that are required for the HE programmes offered through the HE institutions. VET-LSEG students can only be eligible for admission to HE programmes after completing the bridging programme or extra courses successfully. The bridging programme, which prolongs the duration of study, is usually a deterrent to most VET-LSEG students as not many of them could afford to spend the extra time and extra cost on the study.

With these identified restrictions, VET-LSEG students could hardly benefit from these available pathways offered by the limited HE institutions. The following comment from one of the CAs summarises the situation,

Like University-A (the name of university is replaced with acronym for protection of identity) does accept our students for HE studies, but not the others (HE institutions in the similar state)...University-A only accepts our students if they can score good results in their courses here....but not all programmes here are available at the university, and students who wish to apply to University-A are required to study a diploma in polytechnics first....they will need to do 3 years diploma course with polytechnic, then another 4 years with University-A for the degree course, altogether 7 years, for a bachelor degree qualification, long duration, students usually don't want to spend such long time to study, so, most of them just stop after completing their (VET) course here. (C1A2)

As for the expensive school fees, this CA's comment also clearly describes the difficult situation encountered by VET-LSEG students, which eventually caused them to give up the opportunity to pursue HE,

Some of the private institutions do offer for vocational students, like technical courses, yes, they do take our students, because all these private institutions, they don't mind about students' result, they would take any students who can afford to pay. Really, that's why I always tell my students, "don't consider to study at private colleges or universities if you have no money", you know, we used to have one student who applied to one of the private universities in the country, and was expelled because couldn't afford to pay the fees, as you know a lot of private institutions nowadays, they make a lot of promises on their brochures, and when the parents read the brochures, they get mislead and send their children, and after sending their children, they realise a lot of fees to pay, when they cannot afford the fees, the kids get expelled. Some kids who got expelled had no money to even return home, because most of them lived in kampong. (C1A2)

The responses of CAs were compared with the responses of representatives from MOE. In concurrence with CAs', the representatives from MOE also found the lack of progression pathway a significant barrier to VET-LSEG students in Malaysia. The MOE representatives identified similar problems highlighted by CAs in relation to the barrier to progression of VET-LSEG students in Malaysia, and these included:

- The current education system in Malaysia provided few pathways for the progression of VET-LSEG students, and the lack of progression pathways was caused by:
 - Lack of suitable programmes

- Reluctance of institution to admit candidates with skills backgrounds.
- The most apparent progression routes within the public system available for VET-LSEG students were situated within the VET system that offered only skills diploma or advanced diploma as the highest award. Students completing the VET diploma or certificates were required to find progression under the traditional or academic system which usually offered programmes that had little relevance to their vocational studies.
- For the admission to HE, priority was usually given to candidates progressing through the traditional academic school system, especially those with SPM certificate. VET students with their skills background were usually the less preferred candidates which placed them at the bottom of the list for admission for HE with local institutions, especially those public universities and prestigious institutions.
- The available pathway usually required VET-LSEG students to not only complete extra course or bridging programmes, but also to show good results before they could apply and be considered for admission for HE studies with local institutions. The extra courses or bridging programmes were meant to equip VET students with the academic or theoretical knowledge that is considered insufficient among the VET-LSEG students due to their VET background, and was also considered necessary in coping with HE studies.

The typical responses can be observed in the following comments from the MOE representatives,

Well, I think you know that vocational is considered as something at lower level, there is no progression pathway (in Malaysia), like a dead-end road, so that is the challenge....and if these skill people (VET-LSEG students) want to pursue for higher education, they need to cross over to the academic sector, (because) they don't have sufficient theoretical and academic knowledge.... if they want to cross into that (academic) sector, they need to do some 'bridging', you know... they need to fill the gap, the gap between the skills and academy. (MERep2)

We don't discriminate vocational students.... they can come, but they have to go through the (application) process, they must meet the requirements,

and there must choose a suitable programme (which matches to their previous field of studies)...and the admission is (granted) based on (academic) merits, based on merit system....only students who meet the requirements can be granted admission. (MERep3)

The responses of CAs and MOE representatives suggested the importance of the lack of progression pathways for VET-LSEG students. These views were cross-examined with opinions from representatives from HE institutions (HE-Representative) in Malaysia, with the main focus on examining if VET-LSEG students were indeed rejected for admission by the institutions.

In this regards, the views of HE-representative were also explored via interviews, and in concurrence with the CAs and MOE representatives, the HE-Representatives confirmed that:

- Most HE institutions, especially public universities, favour and provide priority to candidates with academic backgrounds, especially those who showed good results or performance in SPM or other equivalent examinations, i.e. O-Level or matriculation programmes.
- Students with vocational backgrounds, like the VET-LSEG students, are usually not favoured or are rejected for admission due to:
 - Lack of suitable programmes that match the backgrounds of VET-LSEG students
 - Students' non-academic experience

The reluctance of HE institutions in admitting VET-LSEG students was apparent in the following response of the HE representative,

Err, others like private universities...or...like universities in America may take them (VET-LSEG students) because these universities may offer similar field of studies, or, universities like, like those vocational universities, may allow them (VET-LSEG students) to continue with their studies, but we can't (admit VET-LSEG students)! We don't have! Our university cannot offer such (VET related) programmes, we don't have the (relevant) subjects....We don't have anything catered for them, nothing catered for them! (HERep1)

Comparing the responses from all parties, including the CAs from VET institutions and representatives from both MOE and HE institutions, one consistency can be found in the responses of all parties in relation to progression of VET-LSEG students. The responses showed that all parties found there was a lack of progression pathway in Malaysia for VET-LSEG students and all parties also found that this lack of progression pathway had been a significant barrier prohibiting VET-LSEG students from progressing to HE. These findings were consistent with literature like Buchanan et al. (2009), Suradin et al. (2010) and Mills, McLaughlin & Carnegie (2013) that also found insufficient progression pathway for VET-LSEG students in HE systems (see Chapter Two).

In summary, the responses suggested that:

- Progression pathway was generally not available for VET-LSEG students, especially those who wished to attain qualification at bachelor degree level or higher. The general reasons of the lack of progression pathways were found due to lack of suitable programmes and reluctance of institutions in admitting VET-LSEG students due to their skills and non-academic background.
- The HE institutions in Malaysia were found favouring candidates with academic background, especially those with good academic achievements like good grades in SPM certificate. This made VET-LSEG students with skills and non-academic background less favourable candidates for admission, especially with public funded universities or colleges due to their lack of academic achievements.
- Though some progression pathways were available for VET-LSEG students, but only offered by very few institutions and on very specific programmes. Only students with relevant backgrounds and good results in prior learning could be considered for admission.
- The admission for available pathways was usually based on academic merits. Such admission procedures make VET-LSEG students less favourable

candidates to HE institutions due to their skills and non-academic background.

- The available pathways usually granted admission with conditions that required VET-LSEG students to study extra semester of extra time. These conditions were found lengthening the duration of the programmes and made the progression offer less attractive to VET-LSEG students, especially to those who wished or were expected to commence work early by their family.
- Most available pathways were found being offered by private institutions which charged expensive fees that were usually unaffordable to VET-LSEG students.

With these findings, it is logical to confirm the lack of progression pathway as a significant barrier affecting the VET-LSEG students' actual opportunity to participate in HE in Malaysia. In view of the impacts caused by the lack of progression pathways, it is important to investigate the factors causing the lack of progression pathways for VET-LSEG students.

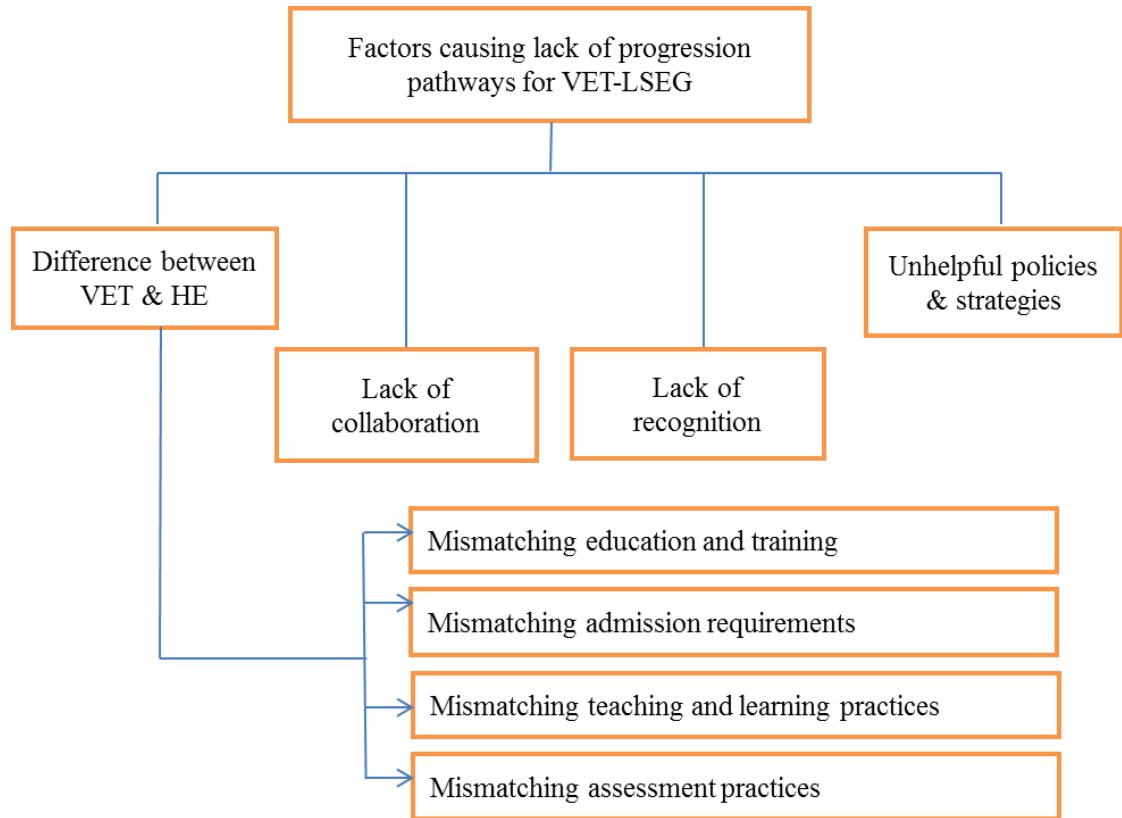
Problems causing Education Related Barriers

The further discussions with CAs revealed that the lack of progression pathways to VET-LSEG students was an ongoing issue inherited within the education system in Malaysia. Numerous factors brought up during the conversations that CAs believed had resulted to the lack of progression pathways, and among all, four major factors were frequently mentioned and thus highlighted for further explorations, these included:

- Difference between VET and HE system
- Lack of collaborations between VET and HE
- Lack of recognition for VET
- Unhelpful governmental policies and strategies

Figure 4.1 summarised the findings of the lack of progression pathways caused by education system. The findings on each factor are presented separately in the following sections.

Figure 4.6 Lack of progression pathways caused by Education System



Difference between VET and HE systems

The CAs believed that the major barrier encountered by VET-LSEG students was caused by the different practices and objectives adopted by each system. In this regard, the first evidence that illustrated CAs' concerns was revealed in their responses provided to three items in the questionnaire, including DFj which required CAs to respond if they agreed students' progression could be affected by the incompatible education & training offered through different systems; DFk-which required CAs to respond if they agreed students' progression was affected by the different teaching styles adopted in HE

system; and the DFI where CAs were asked to respond if they agreed students' progression was affected by the different assessment systems adopted in different system.

The frequency counts on DFj showed that 65% CAs agreed the incompatible education and training between the two systems (DFj) causes an effect on students' progression, whereas only 6% (equivalent to one CA) disagreed and 30% of CAs provided a neutral response. The frequency counts on Item DFk and Item DFI also revealed consistent responses, which captured 65% and 59% agreement rates respectively. The results are summarised in Table 4.17.

Table 4.17 *Descriptive Statistics of Discouraging Factors (N=17)*

Items	Agree (%)	Disagree (%)	Neutral (%)
DFj-Incompatible education & training between HE and VET	65	6	29
DFk-Different teaching styles in HE	65	6	29
DFI-Different assessment system in HE	59	12	29

While the high agreement rates and the low disagreement rates on all three items demonstrated the CAs' concerns about the barriers to HE caused by the differences between the VET and HE systems, they also suggested the significance of the impact of these barriers on the progression of VET-LSEG students. The issue was further explored during interviews in order to seek more evidence.

The interview data showed that, CAs generally agreed that there were apparent differences between the VET and HE systems in Malaysia, and these differences resulted in barriers to students' mobility between the two systems, especially the upward progression of VET-LSEG students from the VET system to the HE institutions. The CAs commented that the HE system was socially and academically positioned at a higher rank than the VET system, and the higher ranked position caused most HE institutions' reluctance in providing progression pathways for students' with only VET or skills education backgrounds, like the VET-LSEG students. The following statement describes the typical responses of CAs,

I don't think the universities in Malaysia are doing anything to help the vocational students (in progressing for HE), these universities don't accept our students...they (universities) have their own different philosophy, or whatsoever standards, of being high up there you know, so, yeah, I don't think they will take vocational students. (C1A1)

The CAs' claim was confirmed by the *Representative from HE institution* (HE Representative). Though the HE representative had not acknowledged that the HE institutions were positioned at 'higher ground' in the academic circle, he did acknowledge the differences between the two systems and the difficulty caused by these differences in offering suitable progression pathways to VET-LSEG students. The following statement of the HE representative explains the sentiment,

No! We cannot (admit VET-LSEG students)! ...because, err, to our university, there is no relevance between vocational (education) and our programmes, we are different! (HERep1)

The CAs' claim was also confirmed by the MOE representatives, who blamed the issue on the different objectives and emphases adopted by the different systems. According to the responses of the MOE representatives, the different objectives and emphases resulted in the HE system focussing on building its academic capacity and offering academically focused programmes that were not relevant to the progression needs of the VET-LSEG students. The following statement from the MOE representative captured the sentiment,

...there is no higher education pathway for them (VET-LSEG students).....the (higher education) system is not very much geared towards the, err, how you say this, err, not catering for the needs of the vocational students, the current (higher education)system (paused) is focusing on providing academic pathways. (MOERep2)

Consistent with the findings of Buchanan et al. (2009) and Suradin et al. (2010), the CAs and representatives from MOE as well as HE institutions all confirmed that the difference between the VET system and HE system had caused barrier to progression of VET-LSEG students.

Further discussions with the respondents, including the CAs from VET institutions and representatives from HE institutions and the MOE, revealed four major factors

resulting from the differences between the two systems, that caused a direct impact on the progression of VET-LSEG students to HE. The four major factors include:

- Mismatching education or training
- Mismatching admission requirements
- Mismatching teaching practices
- Mismatching assessment practices

The findings on the impact of each factor are presented in the following sections.

Mismatching education and training

The responses from CAs suggested that the disciplines of study offered through the VET system were generally different from the disciplines of study offered through the HE system in Malaysia. The CAs' comments were confirmed by the MOE representatives who claimed that it was a MOE rule that programmes offered through VET institutions must not be similar to those offered through the HE system. Though no printed evidence was provided by the MOE representative to support his claim, an apparent difference could be observed between the existing VET and HE programmes offered in Malaysia. In this regard, the HE programmes were academically focused, whereas the VET programmes were technically and skills focused.

The diverse disciplines offered through the different system was claimed to have caused difficulty to VET-LSEG students in searching for suitable programmes to further their education, especially a relevant HE programme that matched the area which they were being trained for during their VET studies. The statement provided from one of the CAs explained the situation,

.....because we (VET institutions) offer rare courses like insurance, retailing, so it is very difficult if students want to pursue for higher education in these same field, because not many universities offer similar courses.....like, our retailing (course) students, I don't know where they can continue their studies, where? I don't see any university offering bachelor degree in retailing! (C4A1)

Other than the difficulty in identifying matching HE programmes, the CAs also commented that the VET-LSEG students, trained mainly with a skills emphasis and

work based practical training by the VET system, were viewed as less equipped with the academic knowledge and skills that were necessary to study HE studies.

In this respect, the CAs explained that it is a standard requirement for all education or training programmes to contain both theoretical and practical elements in the programme structure. The programmes offered through different systems were contrasted by the proportion of academic and practical elements structured into the programme. The VET system adopts a pragmatic intensive approach and structures its programmes with a higher proportion of practical training and less theoretical teaching whereas the HE system takes a traditional academic-intensive approach and structures its programmes with a higher proportion of theoretical teaching and less practical training.

According to the CAs, the proportion between the theoretical and practical elements in a programme varies according to the system but the standard division is between 70% and 30%. The pragmatic intensive VET programmes usually contains at least 70% practical skills and less than 30% theoretical learning, whilst the academic focused HE programmes on the other hand contains at least 70% theoretical learning and less than 30% practical training.

The high proportion of practical and low proportion of theoretical elements in VET programmes were claimed to have equipped students mainly with hands-on skills but not in depth knowledge. The findings suggested that the skills intensive background of VET-LSEG students made them perceived as less suitable candidates for HE studies that were academically intensive.

In addition, according to the CAs, most HE institutions demand applicants to apply with evidence of strong academic achievement in previous education. In this regard, the high skills and low academic background tend to disadvantage the VET-LSEG students and made them less desirable candidates for admission for HE studies. The typical responses from CAs can be observed in the following comment,

Of course it is also a fact that universities don't want to admit vocational students.....because they (VET-LSEG students) are more (inclined) to skills, you know.... higher education (in Malaysia) is more academic-focused, but these (VET-LSEG) students don't have good (academic) foundation, foundation is not so strong, so they may not cope with the (higher education) studies. Like just the Mathematics class (here) can make them sick

(chuckles), like algebra, they are weak even in simple algebra....(it will be) very big challenge for them to cope with the (higher education) studies, because of their foundation you know, because of weak (academic) foundation. (C3A1)

The CAs' views were also confirmed by MOE representatives and HE representatives. The MOE representatives also agreed that the VET-LSEG students usually encountered problems in finding suitable programmes for progression and the skills focused education made VET-LSEG students less favourable candidates to be admitted for HE studies by HE institutions in Malaysia. The typical responses can be observed in the following comment by one of the representative from MOE,

vocational has no pathway right now in our education system, you know ...because most of the universities are actually academic universities and research universities....they are very much focusing on academic fields...that is the problem right now, the problem is universities are not part of vocational education (in Malaysia), that is the problem...our vocational students cannot find a good and suitable programme in universities for progression, for example, in welding technology, if they want to progress to university, there are only academic programmes available, like mechanical engineering, which is different, you know, those are academic field of studies with a lot of theories and a lot of thinking, you know, but our students are hands-on people! (MOERep2)

Thus, the findings suggest that CAs and MOE and HE representatives have similar opinions with regards to the impact of different education and training backgrounds on the progression of VET-LSEG students. The consistent comments provided by both groups of respondents signify the importance of the issue, especially in affecting the opportunity of VET-LSEG students to participate in HE. The impact of the issue was clearly illustrated in the following statement provided by the HE representative,

No! No! Vocational is different...vocational is there for a percentage of students who can't continue on the traditional studies, okay, they are more on hands-on...What they (VET-LSEG students) study in their school is different, from what we do here...They are technical based rather than academic based ... you see, our higher education ministry emphasizes academic based, whereas vocational emphasizes hands-on, so if you bring those two together, students under vocational will probably not make it, under the academic based... It will be difficult, no, cannot, cannot, cannot....they might want to continue their studies with, err, colleges like

TBB college, it's a hands-on college, it's a specialised college, or those health science colleges, they might have those hands-on programs, but not (traditional) universities. I think our Malaysian universities do not offer any hands-on programmes. (HERep1)

The findings confirmed the significant effect of the mismatching education and training in affecting the opportunity of VET-LSEG students to participate in HE. The barrier was rooted in the diverse focus and structure of the programmes offered through different systems. The incompatibility between the skills based VET programmes and the academically focused HE programmes produces a gap which made students' mobility between the two systems difficult. The findings suggested that, in order to overcome the barrier, the gap between the two systems, in terms of programme structuring, must be reduced or eliminated in order to make HE more easily accessible to VET students.

Mismatching admission requirements

The findings show that the qualification possessed by the VET-LSEG students do not match the entry requirements that HE institutions used to assess candidates for HE studies, which eventually costs the students the opportunity to participate in HE studies. The impact of mismatching entry requirements were first found in responses provided by CAs from VET institutions. According to the CAs, the VET or skills certifications were not listed as part of the standard entry requirements imposed by MQA for compulsory adoption by all HE institutions in Malaysia. The findings showed that the exclusion of VET certifications as part of MQA entry requirements deprived VET-LSEG students' of the opportunity to be assessed and get admitted for HE studies in most cases, HE institutions would not even consider the application of these VET-LSEG students. Further explorations on the subject, including interviewing CAs and reviewing of MQA documents, revealed that the standard MQA imposed entry requirements were the SPM (Malaysia Certificate of Education) and STPM (Malaysia Higher Certificate of Education), and these certifications were being granted to students graduating through the traditional academic school system in Malaysia, such as the public funded secondary schools or the private funded secondary or matriculation institutions.

The CAs commented that mismatching entry requirements adopted by HE institutions in Malaysia worked against the benefits of VET-LSEG students and in many cases served as barricade that stopped them from getting approval to study HE with HE institutions in Malaysia. The typical responses can be observed in the following comments,

Our (VET-LSEG) students won't get admission into university because of the entry requirements.....because they have no SPM (see Chapter 2 for details), students must have SPM with credit in Malaysian Language paper in order to apply... so, I think it is quite impossible for them to get accepted for higher education. (C1A2)

...it is because of the entry requirements that cause problems to our students to continue (for higher education). Of course it is also because of the fact that universities don't want to admit vocational students. No matter how, the students just cannot meet those requirements. (C3A1)

The CAs' claim was confirmed by the MOE representatives who also found that the current entry requirements adopted by most HE institutions usually filtered out the application of VET-LSEG students due to their less relevant education background and deprived them of their opportunity to participate in HE studies. The following statement provided by one of the MOE representatives explains their opinions,

No, because in, according to my experience, more than 30 years' experience working in the education system in Malaysia, I can say that...they (HE institutions) must always check SPM (as entry requirements)..... the students must meet this requirement...Yes, definitely, otherwise it is going to be difficult for us, because of different course, different level, you know, so definitely we must have something (prior learning) in order to prove that they can do the (HE) studies. (MOERep3)

In order to obtain further evidence, the CAs and MOE representatives were asked to comment about the credibility of the vocational diploma, a higher level VET qualification than the usual certificate. All respondents were doubtful about the credibility of the vocational diploma in meeting the MQA entry requirements. The following statement from one of the CAs explain the doubt,

We know that SPM is the entry requirement to study higher education like bachelor degree course, but can Vocational Diploma also be listed as entry

requirement, that is not confirmed yet, so in my opinion, this is the second barrier. (C6A1)

When the HE representatives were asked to comment on the credibility of the vocational diploma and other VET certification in meeting the HE entry requirements, the general responses of the HE representatives showed that the HE institutions in Malaysia still upheld the SPM or other equivalent academic certification as entry requirements for HE studies, and all VET certifications, including the vocational diploma, were still not part of the entry requirements for HE studies in Malaysia. The typical responses can be observed in the following comment,

The entry requirement is a barrier, because vocational is not one of the approved entry requirements stipulated by the Ministry. According to MQA, if you want to do a degree program, or (academic) diploma program, you minimum achievement is Form 5! Vocational is not seen equivalent to Form 5 (Upper secondary school which is equivalent to Grade 11 in Australia), the completion of vocational (diploma), because they don't have the (traditional) Grade 12 completion, or studies. You see, they may have only Grade 9 or Grade 10! (HERep1)

Overall, the findings suggested that the standard entry requirements adopted by HE institutions in Malaysia worked against the benefits of VET-LSEG students, filtered out the application of VET-LSEG students, and deprived them the opportunity to participate in HE.

Mismatching teaching and learning practices

The CAs claimed that the mismatching teaching and learning practices were another repercussion caused by the different genres of education and training offered through the VET and HE systems. According to the CAs, the VET system emphasised skills development and thus adopted a pragmatic approach that contained less theoretical or classroom teachings but more hands-on and practical trainings. On the other hand, the HE system emphasised intellectual development and thus adopted traditional academic approaches that contained more theoretical and classroom teachings but less practical and hands-on trainings.

According to CAs, the different teaching approaches were claimed to have structured the learning habits of VET students. According to CAs, the practical VET caused VET students to develop stronger interest in hands-on and practical learning but on the other hand less enthusiastic and less bothered about theoretical learnings. The CAs' opinion can be observed in the following statement captured during interviews,

...the syllabus of the (VET) diploma courses are focusing more on skills, not so much on academic studies, skills 70%, academic 30% only, for them to get a diploma. This creates a mindset in the students where skills are more important, but when it comes to academic studies, not many students are serious in studying the academic part of the course, so many of them usually fail the academic or theory part, subject like Maths, many students fail the subject, because these students cannot see the importance of academic studies, they think they will be okay with their skills competence, they never think of the importance of theory knowledge, and the 30% of the theory learning can actually affect their result. Actually not that they don't know the importance of the academic subjects, but just that they find difficulty in studying the subjects, and they face problems focusing while attending the theory class too. They are more interested in skills learning. Academic to them is inferior. They don't really care if they pass the theory subjects. (C1A2)

The further conversations with CAs revealed that these VET-LSEG students who were used to hands-on and practical trainings were usually perceived to have difficulty in coping with the HE learning, especially in terms of understanding and applying theoretical knowledge. The CAs' comments were consistent with Suradin et al. (2010) who found VET students were less equipped with the necessary academic writing and researching skills that were required to succeed in HE studies. The findings also revealed that these different learning habits and perceptions of being less equipped caused VET-LSEG students to be perceived as less prepared candidates and thus less favourable candidates for admission to HE studies.

Furthermore, the 70% practical training and 30% theoretical teaching also indicated less theoretical knowledge acquired by VET students which as a result suggested their lower capability in coping with and succeeding in the academically intensive studies in HE. This again was found to be another reason why these students were perceived as less suitable candidates for HE studies by HE institutions in Malaysia.

The typical responses can be observed in the comment below made by one of the CAs when he was asked why VET students were less preferred candidates for admission for HE studies by local institutions,

I think they (VET-LSEG students) learn too little (paused), err, too little theory, that's what I think, too little theory, and more in skills. But, this is what we have to do here! As a vocational college, we have to build the (skills) competencies, we have to teach this skill and test that skill, you know, we don't have time to teach a lot of theories, errHere, our emphasis is hands-on (training), train and do, train and do....our syllabuses are different here... so, sure they will have problem with the theory studies (in higher education). Sure they cannot cope! I don't think they can cope with the theory studies! (C1A1)

The CAs' views were consistent with the opinions of MOE and HE representatives. According to the MOE representatives, VET-LSEG students who were used to hands-on trainings were usually viewed as less interested in HE studies and also less capable of coping with HE studies, and such perception usually made them less favourable candidate for HE studies. The HE representatives' opinions can be observed in the following statement,

You see, when they start vocational, it is all hands-on...but when they come to university, there is no hands-on, and it's all books! You see, they, they will find it very difficult to cope...because they are so used to work with hands, suddenly you want them sit down with a book and read 20 pages by tomorrow, they are not cut out for that! (HERep1)

Thus, in summary, VET-LSEG students were perceived to be less equipped and less interested in HE studies due to their learning habits shaped by VET that emphasises hands-on and practical training. The VET-LSEG students were also believed to have more interest in practical trainings and to be less equipped with the academic and writing skills that were required in handling HE studies. These results are consistent with studies like Suradin et al. (2010) and Moodie (2003) that suggest the similar findings.

Mismatching assessment practices

The CAs claimed that the different education structure affected not only the teaching and learning practices, but also assessment structures in the different education systems. The CAs' responses showed that, similar to the structuring of the education or training programmes, the assessment was also structured according to the education approach adopted by the different systems, namely the pragmatic approach and academic approach. The pragmatic assessment adopted in VET focused mainly on the demonstration of skills, whereas the academic assessment adopted by HE system focused mainly on demonstration of knowledge acquisition and development. The CAs explained that the assessment structure determined the assessment practices, and thus, the general method used for pragmatic assessment was competency testing where students were asked to perform tasks using the skills acquired. In contrast, the general method used for academic assessment was written assessment where students were asked to demonstrate their acquired knowledge in examinations and assignments.

The findings suggested that the different assessment practices were also viewed to have taken a toll on VET-LSEG students' capability in coping with the assessment practices adopted in HE studies. According to the CAs, VET-LSEG students who were used to practical assessments that involved mainly the demonstration of skills in completing hands-on tasks usually were seen as untrained with the knowledge and skills to handle the academic assessment in HE which involved mainly written examinations or assignments. In addition, the written assessments in HE were also perceived to be too difficult to handle by VET students who demonstrated less interest and less knowledge in academic writing. The CAs' responses can be observed in the following comments,

I think the practical assessment is much more preferable by the vocational students...the competency assessment...based on 30% theories tests and 70% of practical trainings and other (practical) exercises....you just do and do and do until you are competent, that is the principle of competency assessment...that helps students to pass their subjects, and to complete the diploma! (C4A1)

Ok, it is definitely different here...the assessment here is different from those in academic schools, in academic schools, they sit for one-time assessment at the end of the year, but here, they follow the semester system, they must complete a subject and pass everything during the semester

because as they progress into new semester, they will learn different subject and different skill sets...so, in my opinion....this (VET) is easier for them (VET-LSEG students). (C2A1)

The lack of skills and knowledge in handling academic assessment perceived in VET-LSEG students were also claimed to have made them a less desirable candidate for HE studies, especially by HE institutions in Malaysia. The following comment from the HE representative confirmed the findings,

You see, higher education emphasizes on exam based assessment, whereas vocational emphasizes on hands-on competency test...students under vocational system probably will not make it, they will not pass the exam. (HERep1)

Though the representatives from MOE did not comment on how students' progression opportunity could be affected by the different assessment practices, they did show concern about the students' capability in coping with the HE studies being affected by different assessment practices. The following statement illustrates the MOE representatives' thoughts,

....this is the problem, the (VET-LSEG) students are now exposed to 70% hands-on continuous evaluation and 30% of theoretical test, but in the university, that (assessment structure) would be different, more theoretical than practical, with 50% for continuous knowledge assessment and 50% final examination, some could be 100% theoretical too, ...so that could be a problem to the students. (HERep2)

Thus, the findings suggest that the dissimilar assessment structures adopted by the different systems result in doubts about the VET-LSEG students' capability in handling the assessment practices adopted by HE institutions. Not only were the VET-LSEG students perceived as less equipped with the necessary knowledge and skills in handling assessment in HE studies but also as less capable in surviving the different assessment practices adopted in HE studies. These negative perceptions were also found causing HE institutions' hesitation in admitting the VET-LSEG students for HE studies.

However, it is important also to note that, though the assessment structures adopted by VET institutions was different from those adopted by the HE institutions, the grading system used by the VET institutions, especially the vocational colleges, was

similar to the system used by the HE institutions. Instead of assessing the students using competency tests with ‘competent’ or ‘not competent’ categories, the VET institutions were found grading the students’ practical tests and theoretical examinations using different marks and grades like Fail, Pass, Credit, Distinction and High Distinction. In addition, the Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) were also found being adopted to indicate the final score of the VET-LSEG students.

According to the Representative from the MOE, the similar grading system was meant to synchronise the assessment system between the VET and traditional education systems in order to enable not only collaborations between systems but also students’ mobility between two systems. However, the representatives from HE institutions were less convinced and claimed that the VET’s similar grading system was just a superficial tool implemented to embellish the VET or skills students’ ‘final academic transcript’. Though CGPA was calculated it still could not hide the fact that these students were trained with narrower work-specific training and assessed using mainly skills competency tests. The representatives concerns are described in following statement recorded,

...I am not sure, but how they mark the practicals? How many practical tests they have in one subject? Let say if the students complete a task, do they get 80% or 100%?....I don’t think that is similar (with the grading system adopted by higher education institutions). (HERep2)

The responses suggested that HE institutions were not convinced about the synchronised grading system. The responses also indicated that HE institutions put more concern on the assessment methods instead of the grading system. Thus, the findings indicated that the VET grading system, although similar, would not provide extra credits to VET-LSEG students in getting admitted for HE studies.

Lack of collaboration

The impact of lack of collaboration was first explored through analysing CAs’ responses in Questionnaires, the responses to Item DF_n (Lack of collaboration between VET and HE in creating progression pathways) were examined, and the frequency counts showed that 64.7% CAs agreed that lack of collaboration was an issue causing

barriers to VET-LSEG students in progressing to HE studies. Only 5.9% CAs disagreed and 29.4% CAs responded Neutral. The high agreement rates and low disagreement rates suggested the significant impact of lack of progression pathways which warranted the issue being further explored during interviews.

During interviews, the CAs confirmed the negative impact of insufficient collaboration between the VET and HE systems on the progression of VET-LSEG students to HE studies in Malaysia. According to the CAs, the lack of collaboration was first caused by the gap between the two systems, and produced three major consequences that resulted in barriers to VET-LSEG students in progressing to HE;

1. Lack of suitable programmes for the progression of VET-LSEG students.
2. Lack of information for the HE system to assess the potential of VET-LSEG students in order to grant admission, especially in terms of the knowledge and skills received through VET programmes.
3. Lack of information for the VET institutions to advise VET students about HE, especially in preparing them for application for admission.

Resolving the gap

While acknowledging the lack of collaboration between the two systems and narrating the consequences that resulted in students' barriers to HE, the CAs claimed that in order to make progression possible for VET-LSEG students, the gap between the two systems needed to be resolved, and the most effective way to resolve the gap was through establishing functional collaborations. According to the CAs, an effective collaboration helped not only to mitigate the gap between the two systems but also helped to create the following possibilities that made HE easier attainable by the VET-LSEG students:

- Better discussion between the two systems in order to create progression pathways for VET-LSEG students, especially in designing and offering HE programmes that are suitable and related to the field of studies of the VET-LSEG students.

- Better negotiation between the two systems in setting admission requirements, so that vocational qualifications can be listed as formal entry requirements for HE programmes.
- Better cooperation between the two systems in preparing students for HE, especially in providing advice and information about applying for admission.
- Better mutual understanding between the two systems, especially in terms of programmes and syllabuses offered through the different systems. This is important for the HE in understanding the potential and capability of VET-LSEG students while assessing their application for admission. This is also important for the VET institutions in understanding the requirements and criteria set by the HE system in assessing students' for admission.

Memorandum of Understanding (MOU)

However, when CAs were asked to suggest possible collaborating strategies, the most common strategy indicated by all CAs was to establish a Memorandum of Understanding (MOU) between VET institutions and HE institutions. According to the CAs, establishing MOU was also a major strategy implemented under the government's new transformation programme with the purpose to establish progression pathways for VET-LSEG students completing the vocational diploma, which implied the eagerness and seriousness of VET institutions in making this strategy work.

The CAs claimed that the MOU was important for two purposes. Firstly, it was meant to assure that, with the partner universities, progression pathways are established formally for VET-LSEG students so that students could be assured of admission to these universities after completing their VET programmes. Secondly, it was to ensure relevant and important information and counselling was made available for VET-LSEG students in order to prepare them for progressing to HE. The following statement describes the CAs' thoughts,

Signing MOU with universities is important, (vocational) colleges must have these collaborations with universities.... with MOU, we can get proper information and advise the students (about) what programmes to do in which university. So MOU is very important. (C3A1)

While noting the importance of MOU, the CAs also expressed concern about difficulty in securing a MOU successfully with local HE institutions, especially with publicly funded universities in Malaysia. In this regard, the CAs admitted that despite the policy, not many MOUs were established up to date, especially with publicly funded HE institutions in Malaysia.

When asked about the possible problems causing the difficulty in securing a MOU, the CAs claimed that the lack of a MOU could be due to the collaboration strategy which is implemented only within the VET system but not imposed widely in the HE system. Hence, despite the enthusiasm shown by the VET institutions in building collaboration, little interest could be raised from the HE institutions, especially those established universities in the country. According to CAs, without strict and clear enforcement within the HE system, the HE institutions that were interested establishing collaborations would have no awareness of and information about establishing a collaboration. In addition, the institutions that were initially not interested would still remain uninterested in establishing collaborations with VET institutions.

The CAs observed that the MOU strategy seemed more like a unilateral effort initiated only by the VET institutions but hardly attracting any interest from HE institutions. Thus, on most occasions, the request to establish collaboration was initiated only by the VET institutions, and the request was rarely responded to by the HE institutions. According to the CAs, it was possible that the HE institutions saw no benefits in the collaboration, especially to the HE institutions, and thus were not showing interest in collaborating. This lack of interest was the major reason causing the failure in establishing a MOU, and such a strategy would not succeed until the HE institutions shared the same interest and same willingness to cooperate.

It is important to note that some CAs claimed that the MOU strategy would not succeed without the MOE's or government direct intervention, especially in providing directives for both systems to collaborate. It is also important to note that though the CAs expressed a worry about not being able to establish a MOU on the other hand they seemed to show confidence in the government's planning in implementing a new strategy which could enable the progression of VET-LSEG students. These findings also

suggested the important effectiveness of government's intervention in enabling effective implementation of educational policies and strategies.

In concurrence with the CAs, the MOE representatives confirmed the problem of insufficient collaborations between VET and HE systems, and this lack of collaboration was one of the major factors causing difficulty to VET-LSEG students in progressing to HE. However, though they agreed with the CAs' views on lack of collaboration, the MOE representatives provided a different view on the willingness or reluctance of HE institutions in collaborating with VET institutions. In this regard, the MOE referred to most existing HE institutions in the country as traditional or conventional institutions. As the focus of these conventional institutions was to deliver academic and research excellence, collaborating with VET institutions in producing a skilled workforce was often regarded as non-beneficial and non-relevant to the main objective of the conventional HE institutions, and thus was not well accepted by these institutions.

The MOE representatives claimed that the reluctance of HE institutions in collaborating with VET institutions was an inherited problem deeply rooted in the education system in Malaysia. The problem, caused by the differences between the systems as discussed earlier, had existed since the construction of both systems and could hardly be resolved without the total revamp of the whole education system. As one of the representatives indicated, this change was not something that the government intended to undertake in the near future. Since there was no intention in changing the system especially in changing or forcing these conventional institutions to collaborate with VET institutions to admit VET-LSEG students or to offer vocational related HE programmes.

However, according to the MOE representatives, though the government had no intention to change the existing conventional universities, especially in forcing these universities to collaborate with VET institutions, the collaboration between the two systems could still take place at a different level, with a different strategy. The representatives referred to this approach as MTUN (Malaysian Technical University Network) strategy.

MTUN Strategy

According to the MOE representatives, the MTUN strategy was a newly implemented strategy under the government's transformation programme, where a group of existing local HE institutions were nominated to form an alliance and to work together with the VET system to design and offer HE programmes that are suitable for the progression of VET students in Malaysia. The strategy was put in place in conjunction with the implementation of new vocational colleges and the vocational diploma programme implemented in 2013 (Kandar, 2014). The main objective is to offer higher level vocational or technical education programmes to students graduated through these vocational colleges with a vocational diploma. Under the implementation of the strategy, a group of five public universities had been nominated and entrusted with responsibilities to design and offer relevant bachelor degree level programmes to vocational students that aspired to HE and were qualified for HE.

High confidence and anticipation were observed in the comments of MOE representatives in relation to the MTUN strategy. According to the representatives, the MTUN provides a better platform for VET students to progress for HE. The MOE representatives claimed that with these expected outcomes, the MTUN universities should suffice to meet the progression needs of the VET-LSEG students, and with the existence of MTUN, the conventional universities should not be disturbed or forced into collaboration with VET institutions. Typical responses can be observed in the following comment,

It is good enough for MTUN universities to take the vocational graduates. We should leave the conventional universities alone, because they have their agenda and purpose! As long as we have all these other universities taking the vocational graduates, they (VET students) are fine. (MOERep4)

The representatives claimed that, with the MTUN strategy, the progression pathways could be established without a drastic change to the current education system. Thus, the VET system could enhance its capacity in producing a skilled workforce with higher level skills while the conventional HE institutions could maintain their focus on producing academic scholars and pursuing academic excellence, which are also needed in the country. The following comment summarised the responses of representatives on this regard,

To me, I think, the conventional universities, especially those traditional universities, they should be producing the professionals, the scientists, or the researchers in order to give new (scholarly) ideas. We need people working at different level jobs, we need new ideas for innovations, and they (conventional universities) should focus on that! For VET, we are producing people who can think a bit less, you know, who can think and also can do things, we should support this level of development, like producing technologists, because the researchers, or the professionals also need technologists to operate the machine and do things! So I think we complement each other. So, in my opinion, they (the conventional universities) should focus on what they do. You see, we don't have many conventional universities, so not many students they can take in anyway. I think we should just let them focus on what they do, and we (VET system) focus on our objectives and try to produce the best we can! Once that happen, then maybe they (conventional universities) will also follow what we do. (MOERep3)

Though the MOE representatives showed strong confidence in MTUN, on the other hand they also showed hesitation in the execution of the strategy, especially in the commitment and capacity of the institutions involved in fulfilling the responsibilities entrusted with the MTUN strategy. In this regard, the representatives stressed that incentives are required to motivate the involved institutions, especially in assuring their commitment and efforts in designing and offering suitable programmes for the progression of VET-LSEG students were recognised. The following comment of one of the representatives is typical,

So that's what happened in our vocational transformation, whereby we create a new pathway for the students. But we need to convince these (MTUN) universities, in fact some of the universities are already convinced, that they need to design (bachelor) degree programs that are suitable for vocational students, you know, not the traditional conventional programmes, but vocational bachelor degree programmes, then it will be easier. So, we encourage the universities to discuss with us (VET division in MOE), to design programs, to submit programs at higher level with same, err, same landscape and same concept as vocational (for ministry approval), so that vocational students don't need to do any bridging programme, can enrol and study right away, that will be easier! (MOERep2)

Therefore, in summary, the responses of the CAs and MOE representatives confirmed the need for collaboration between the VET and HE systems in order to

establish effective progression pathways for VET-LSEG students. This collaboration is especially important in ensuring admission opportunities for the VET-LSEG students and also in ensuring suitable programmes are designed and offered for the progression of VET-LSEG students. However, though MOE representatives agreed about the importance of collaboration, they also indicated that such collaboration should be limited only to HE institutions selected under the MTUN project, so that both systems could maintain their function and continue to pursue their separate goals.

Lack of recognition

The literature review in Chapter 2 revealed that the skills focused nature of VET has impacted on its image and caused it to appear to be less prestigious and less well accredited compared to the academically focused education offered through the mainstream education system in Malaysia.

Negative Image of VET

The negative image of the VET system can be observed in students' urge for VET institutions to improve the institution's image. The responses in the questionnaires, through item ROVe-Improve VET image, showed that 93% of students agreed the need for VET institutions to improve the image of VET, 6% students provided neutral response and less than 1% disagreed on the need to improve the image of VET. The high agreement rate indicated the inferior image of VET which impacts on its recognition in education circles as well as society as a whole in Malaysia.

The CAs' comments explained the students' urge for VET to improve its image. According to the representatives, VET is considered a second rate education as compared to the academic education offered through the mainstream or traditional education system. The typical responses of CAs can be summarised in the following comment made by one of the CA,

Now, there are still perceptions about vocational being low profile, low class! (C6A1)

The CAs commented that the negative image was not only limited to VET itself but also to the students enrolled and studying under the system. According to the CAs, VET institutions in Malaysia are generally perceived as institutions for weak students and dropouts from the mainstream school system. The students in the VET institutions are also perceived as problematic students with attitude problems and having difficulty coping with academic studies. Such perceptions extended not only through the education circles but also across society as a whole. The CAs' responses can be summarised in the following comment of one of the CAs,

Maybe they think they vocational is lower class, I think this is the mindset until now, vocational is for 'budak yang lemah' (kids with weak academic result)! Yeah, that's why I said just now, even teachers in those traditional secondary schools, they actually send all their weak students here to register, yeah, so the people's mindset is like this. Like me too, when I was not working in vocational school, I thought the same also! Vocational is for 'budak nakal' (naughty kids)! For kids that cannot study at all! (C1A1)

The CAs claimed that this negative image caused the VET institutions and VET students to appear less recognisable compared to other students studying through the mainstream academic education system. As a result, this image reduced the VET-LSEG students chance of getting accepted by HE institutions for HE studies, especially the public institutions that were interested only in admitting students with good academic performances.

In agreement with VET-LSEG students' and CAs' views, the representatives from both MOE and HE institutions provided similar comments on the negative image of VET as well as students studying VET in Malaysia. Similarly, both groups of representatives agreed that the general perception about VET was that it was a type of education established to train students with problematic behaviour, or who performed weakly in academic studies. The typical responses can be summarised in the following comment provided by MOE representative,

Well, I think you know that vocational is considered as something at lower level. There is no progression pathway, like a dead-end road, so that is the challenge....those who entered the vocational were considered either as handicapped or poor in academic performance. (MOERep2)

The representative from HE institutions explained that not only are VET-LSEG students viewed as less capable, but they are also perceived as not interested in academic studies, and that was another reason why they were generally not suitable candidates to be admitted for HE studies. The comments of these HE representatives can be observed as follow,

Vocational is set up for (academically) weak students... we have to accept that there are some students who just don't like studying (short paused), who don't like books, who don't like to read, so the government has given them that choice, you see, after Form 3 (lower secondary level three which equivalent with grade ten in Australia), they go to study vocational, or even the dropouts, all right, school dropouts can join vocational! (HERep1)

When asked about the reasons causing VET to be less recognizable, both the representatives from HE and MOE again related it to the different nature of the education and training offered through the system which focused on skills instead of academic development. According to both group of respondents, the less academic focused structure gives it less standing in academic education circles as well as in society. Besides, the findings showed that the main objective of VET, which was to produce skilled workers, had also placed VET in a less prestigious position in the academic and education circles.

Improving Image of VET

Although acknowledging the lower prestige and less recognized image of VET, causing barriers to the progression of VET students, the representatives from MOE and the HE system seemed to see no requirement to change the current structure of the VET system in order to make way for VET students to progress to higher level studies with the current HE system. According to the representatives, both systems should maintain their distinctive role in order to provide different types of education or training to students. Besides, the representatives preferred to maintain the different roles in order to provide students with choices in selecting the education or training pathway which was suitable to their preference and, most importantly, to their capability, which, was important especially to those who find difficulty in coping with academic studies.

Thus, instead of suggesting changes to the current education systems, the representatives showed stronger preference for MTUN institutions that are expected to provide VET related HE pathways to VET-LSEG students. According to the representatives, the MTUN was expected to improve the image of VET in Malaysia because the progression pathways provided through the MTUN institutions implied that VET was no longer a 'dead-end route'. Students graduated through VET system were provided a more certain opportunity to progress to HE with government established HE institutions. Being able to progress to the government established MTUN institutions was also considered to improve the recognition provided to VET-LSEG students that could subsequently help to open more doors for the students to get admitted for HE studies by other HE institutions in the country.

In addition, the MOE representatives commented that better professional accreditation could also help in improving the overall image of VET and adding value to the qualifications granted through the system. In this regard, the MOE representatives claimed that the government was in the process of establishing an accreditation board, which they referred to as the 'Malaysian Board of Technology' (MBOT), to grant formal and professional accreditation to the programmes and qualifications offered through the VET system in Malaysia. According to the MOE representatives, the image and recognition of VET were expected to improve with the accreditation granted formally by the government established MBOT, and thus improve their graduates' opportunity either in continuing to HE or in securing employment.

In summary, all respondents, including students, CAs and representatives from MOE and HE institutions, agreed that VET suffered from a negative and inferior image that caused difficulty for its students, especially the VET-LSEG students, in progressing to HE in Malaysia. The respondents claimed that the image of VET was mainly caused by the skills focused nature of the education provided through the VET system and its role in producing a lower level skilled workforce.

In order to improve the image of VET, the respondents claimed that the government has created progression pathways with MTUN institutions so that the admission granted by MTUN could improve the image of both VET qualifications and

VET graduates, and subsequently inspire other HE institutions in Malaysia to also offer admission to VET-LSEG students for HE studies. In addition, the government is in the process of establishing relevant accreditation bodies in order to grant recognition and add credibility to the programmes and qualifications offered through the VET system, so that the qualifications offered through the VET system provide students with better standing in the academic circle as well as in employment market.

Unhelpful policies and strategies

The literature review (see Chapter 2) suggested that the education policies and strategies implemented over the years contributed to the development of the education system but have not proved beneficial to all students in Malaysia. The lack of progression pathways for VET-LSEG students in a well-developed education system was an example of how government policies benefitted only the development of the traditional education system and students with academic backgrounds but not the students with VET backgrounds, especially in terms of attaining higher academic and educational achievement.

In order to investigate the impact of the unhelpful policies and strategies on progression of VET-LSEG students, the CAs' responses in questionnaires were first examined. The frequency counts of CAs' responses to Item DFq (Unfriendly & discouraging government policies) showed that 64.8% agreed that the progression of VET-LSEG students was affected by unhelpful education policies and strategies implemented by government in Malaysia. Only 18% disagreed and 17% CAs provided Neutral response. The high agreement rate suggested that the unhelpful education policies and strategies were indeed a significant issue affecting the progression of VET-LSEG students to HE in Malaysia.

Policies to encourage employment

The impact of unhelpful education policies and strategies were further explored during interviews. The responses from CAs suggested that the policy related barriers was usually caused by the government's emphasis in encouraging VET-LSEG students

to work more than to continue for HE. In this regard, the CAs claimed that the initial education policy and strategies in Malaysia promoted the skills development of VET-LSEG students but was not helpful for the educational development of VET-LSEG students. This lack of encouragement was caused by the main objective of government and VET system in training and producing a skilled workforce for industry. As a result, VET-LSEG students enrolled into the VET system were expected to enter the job market to work more than to enter HE institutions to study. The responses of CAs can be summarised in the following statement made by one of the CAs while he was asked to comment about the best progression option of VET-LSEG students after completing their VET programme,

I think, the government would rather them (VET-LSEG students) to go out to work (after completing VET programme). You can check the statistics, how many of them, those students with the (higher education) degree, many are still not working (unemployed), err (paused), because when you have high qualification, you will want to be a boss, you see? If you study up to the middle (level) only, you will want to be in the middle, and now what happen is we need middle people, middle, I mean middle class co-workers than the bosses above them, so in my opinion, government needs more people to work at the middle and lower level....Hmm (paused), so getting job offer is the main thing, err, I think with job they can earn a living, after getting their own skills, they can work, later maybe they can get promoted to managerial posts, or managing their own company, they can achieve these with the skills we teach them. (C1A1)

The CA's comment narrated not only the preference but also the mission of the government to maintain the country's economic productivity through implementation of various policies and strategies. Since the mission associated closely to the country's economic development and wealth generation, that gave more reasons to the government and also to the related organization, especially the VET system, to ensure the policies and strategies implemented are carried out and executed successfully. The determination of the government is apparent in the following comment made by the MOE representative,

Of course, that's what our diploma is for! The students are targeted for employability, for the industry....That's why we are not running away from the skills emphasis, but since our diploma is a diploma in vocational, we need to show that the focus is on vocational. (MOERep3)

The MOE representative's comment showed not only the determination of government in executing the policy which emphasising workforce generation through the VET system but also the destination of VET-LSEG students to enter the job market after completing their VET programme. Such determination was enforced and instructed to the VET system as a mission so that the system worked together to ensure the successful execution of the policy. These policies explained the low representation of VET students in the HE and also the lack of progression pathways for VET-LSEG students in Malaysia.

70-20-10 policy

As narrated the MOE representatives, however, the increasingly globalised economy and technology development posed challenges that raised the need for government to produce a workforce with higher and more sophisticated skills in order to keep up with the increasingly complicated job market caused by industry change and technology advancements. In view of this, new strategies were drafted to create a new workforce with higher skills while maintaining the production of a basic skilled workforce. In this regards, the most recent and relevant strategy implemented was what CAs and MOE representatives referred to as the 70-20-10 policy that introduced under the government transformation programme with a purpose to ensure qualified and potential VET students progressed to related HE in order to acquire higher level skills and qualifications.

According to the MOE representatives, and in reference to the transformation programme for vocational education in Malaysia, the policy has been implemented to compliment the MTUN strategy. The idea of 70-20-10 serves as a guideline for the production of VET graduates, especially in the government funded vocational colleges. In every cohort, students graduating in the top 20% are expected to continue to HE studies with the MTUN institutions, while the remaining students are expected to enter the commercial world, where 70% work in industry related to their field of training, and 10% enter entrepreneurship in fields related to their training (Ministry of Education,

2014c). This central aim of the 70-20-10 strategy is summarised in the following comment of one of the representatives,

....because we are going for 70-20-10! 70% will be in the workforce, 20% to continue their studies for higher education and 10% we are creating as entrepreneur....That's the new transformation of the vocational education in Malaysia. (MOERep1)

Together with the MTUN strategy, 70-20-10 is implemented within the VET system and also enforced as strict guideline into the VET institutions in order to guide the operations of the institutions, especially the government funded vocational colleges. With the implemented guidelines, every institution works towards producing 70% workforce to work in the related industries, 20% to continue to HE with MTUN institutions, and 10% to commence entrepreneurship. The strict enforcement of the 70-20-10 strategy can be observed in CAs' comments, such as,

We have to meet our mission, the 70-20-10. So of course if we have 70% go out to work, 20% continue to study and 10% start their own business, that would be perfect! (C3A1)

However, according to the CAs, though the new strategies provided the needed progression pathways, VET institutions still had to bear in mind that the main objective remained as producing a skilled workforce for the job market instead of preparing students for HE like the mainstream education system in Malaysia. The CAs' views are illustrated in the following comments,

Yeah, that's why, the government's target is 70-20-10, the main target is for the students to work, 70% of every cohort, not to prepare them to study. (C4A1)

For the 20% (who scored good result in VET) yes, I agree, they should continue (to study), but for the rest, I would still say that going out to work is more important, that must be prioritised! They can continue their studies later, while working maybe, like I always tell my students, you can continue to study up to very high level but if your education is not relevant, what is the use? You will still end up being unemployed! But if you go out to work, and learn while you are working, you will become even more competent and more skilful. (C2A1)

The MOE representatives, who asserted that the 70-20-10 policy provided progression pathways only for students that obtained good results, and achieved the top 20% scores in each cohort, confirmed the CAs' comments. Students who failed to achieve the top 20% were expected to leave school to work in the related job field. In this regard, the representatives also stressed that the implementation of 70-20-10 and MTUN strategies created a new platform to offer VET related HE programmes but should not divert the main function of the VET system, which was to prepare a skilled workforce for various industries instead of preparing students for HE. The representatives' views are described in the following comment,

We must make sure 20% of our students will be articulated into higher education, 70% is for the industries, away and working, and 10% working on their own as entrepreneur....everyone from vocational colleges can be entrepreneur, everyone from vocational colleges who meet the requirements can go further, they can go further in term of education, but in ours (paused), err, what do you call it, in terms of motivation, in terms of (progression) pathways, we facilitate only for 20%, that is our target. (MOERep2)

The findings also showed that, in order to ensure successful implementation of the strategies, the 70-20-10 strategy was imposed as a strict guideline in guiding the operations and developments of VET institutions in Malaysia, especially the public funded vocational colleges. Besides, the VET institutions were also focusing more on building the career interest of students than the students' interest in pursuing for HE. The VET institutions stronger efforts in building career interest within VET-LSEG students were demonstrated clearly in the structures of the VET programmes, where the occupational elements were being highlighted and emphasised with incorporation of a more work-based nature curriculum and 'On the Job Training' (OJT).

The CAs claimed that with the work-based programme structure, the students could learn the skills directly related to the job in the real world situation while the OJT could place the students in a real work environment to experience the reality of working in the position. The OJT could also provide students with better occupational experiences and opportunities to build professional networks with employers and people in the relevant industry. According to the CAs, these practical work-based trainings and occupational experiences are expected to inspire the students' desire to work while the

professional networks with related industry is expected to enhance students' opportunity to get employment after completing the VET programmes, especially from employers or companies where the students undertake their OJT. The CAs' views are summarised in the following comment,

Actually we have the On-Job training after the final year. So, from there, we hope the company will recruit them after the training, this is what we hope to happen (paused). So, under the transformation (programme)...we don't hope for them to continue to study, but we hope that they can go out to work, fill the part (of work) which is 'kosong' (not taken by academic students), to be the workers...they can continue their studies while working. (C1A1)

The CAs' views were again supported by representatives from MOE, who asserted though the progression opportunity is provided only to a small number of students in each cohort, it was definitely the government's intention to provide suitable progression pathways for every student. Thus, with the 70-20-10 strategy, the qualified students could progress to HE, the less qualified students were still provided proper progression opportunities either to work or to commence business, and students who could not progress to HE could study when they were more ready, after obtaining more knowledge and skills from their workplace. The representatives' views are demonstrated in the following comment,

Yes, we control the (policies) outcome and we provide the pathway for them (VET-LSEG students). Actually there, there will be students who get less (qualifying result) than that (top 20%) and want to go further, that will be another challenge. So we will advise them to gain some work experience first, three years and after that, if they want to continue, they can continue, but we are actually not encouraging them. So in order to show them that we are not providing pathway for this group of students, we provide pathways for them to go into the industries. (MOERep2)

According to the representatives, with the establishment of MTUN and the availability of these new progression pathways, the education system could be expected to achieve a new and better equilibrium. Within this approach, students from different systems, namely the academic and VET, could be provided better opportunities to attain HE, and even students within the VET system could be provided suitable progression pathways according to their calibre and performance.

However, it is also important to note that though the strategies were claimed to have been implemented across the relevant institutions, including the vocational colleges and MTUN institutions, the responses of CAs suggested that some of the institutions were still not clearly informed about the functions and details of the strategies, especially those institutions in East Malaysia and more rural areas. Ambiguities were still raised in CAs' comments especially about:

- List of institutions under MTUN
- Available programmes for the progression of students
- Precise details about the entry requirements for the available HE programmes

The CAs claimed that these uncertainties affected their job and responsibility in preparing and motivating the students for HE. Without proper encouragement and clear information to motivate students for HE, students could be easily distracted by the well planned occupational emphasised structure of the VET programme and could see more assurance and relevance in getting employment than to pursue HE. These attitudes could directly affect the progression desire of the students, even those who could finally qualify as top 20% to enter the MTUN universities. The uncertainty of CAs and the consequences are clearly described in the following comments of CAs,

Hmm (paused), err, maybe in terms of CGPA, we don't know what CGPA can get accepted by university. We are still new, maybe the government is still deciding on the CGPA to enter (MTUN) universities. I am not so sure, for those onto the (bachelor) degree programs, sometimes the criteria differs according to institutions and programmes, so sometimes it is very difficult for us counsellors to confirm information which the government not revealing to the public..... in terms of providing clear information, like the entry requirements and CGPA required, that information is not provided yet, no confirmed information. Because if they can provide the confirmed information, we can prepare the students, let them see the target of getting offer (to study), we can tell them what they can do after completing the diploma, whether to study or to work, and if they want to study, what they need to achieve while studying here and how they can achieve, like, the goal setting! Just like those SPM students in normal school, they know clearly what they have to achieve in order to continue study, but this vocational diploma, maybe it is still new, so, maybe the requirements are not clearly set and there are not confirmed yet, so we cannot reveal to the students. (C4A1)

In my opinion, the barrier, up to this stage is we don't know where can the students go? Supposedly, as a counsellor, these pathways should have already been confirmed, because with confirmed pathways, the students can see the target and work towards achieving the target. Like now, the pathways are not confirmed, and as a counsellor, I don't feel comfortable counselling my students, because I don't know for sure what university can really take them in for higher education. The ministry has only told us verbally the list of universities offering pathways for our students, but no black and white, and no MOU to confirm. In my opinion, that is a barrier, because students won't believe us if we try to tell them things that are not confirmed. (C6A1)

Section summary

In summary, the education system in Malaysia was found not helpful in enabling VET-LSEG students to progress to HE in Malaysia. The findings showed that though the barriers caused by the education system had not caused a significant impact on students' aspiration for HE, it had significantly affected their opportunity to participate in HE. The education system related barriers were caused by four major factors that included the differences between the VET and HE systems, the lack of collaboration between the VET and HE systems, the lack of recognition provided to VET, and the education policies and strategies that were unhelpful in helping students in progressing for HE after completing their VET studies.

Despite students' concerns about the effect of the six major factors that contributed to barriers encountered by VET-LSEG students, their aspiration for HE was nonetheless found not to be significantly discouraged by these factors. Comparatively, the students' actual opportunity to participate in HE was found significantly affected by the six major factors that contributed to barriers encountered by VET-LSEG students in Malaysia. Among all, the financial difficulties and the unhelpful education system were two major factors that caused most serious barrier to VET-LSEG students in participating in HE. Figure 4.7 illustrates a conceptual model indicating the impacts of each Contributing Factor on Barriers to HE encountered by VET-LSEG students, in term of aspiration and opportunity to participate in HE.

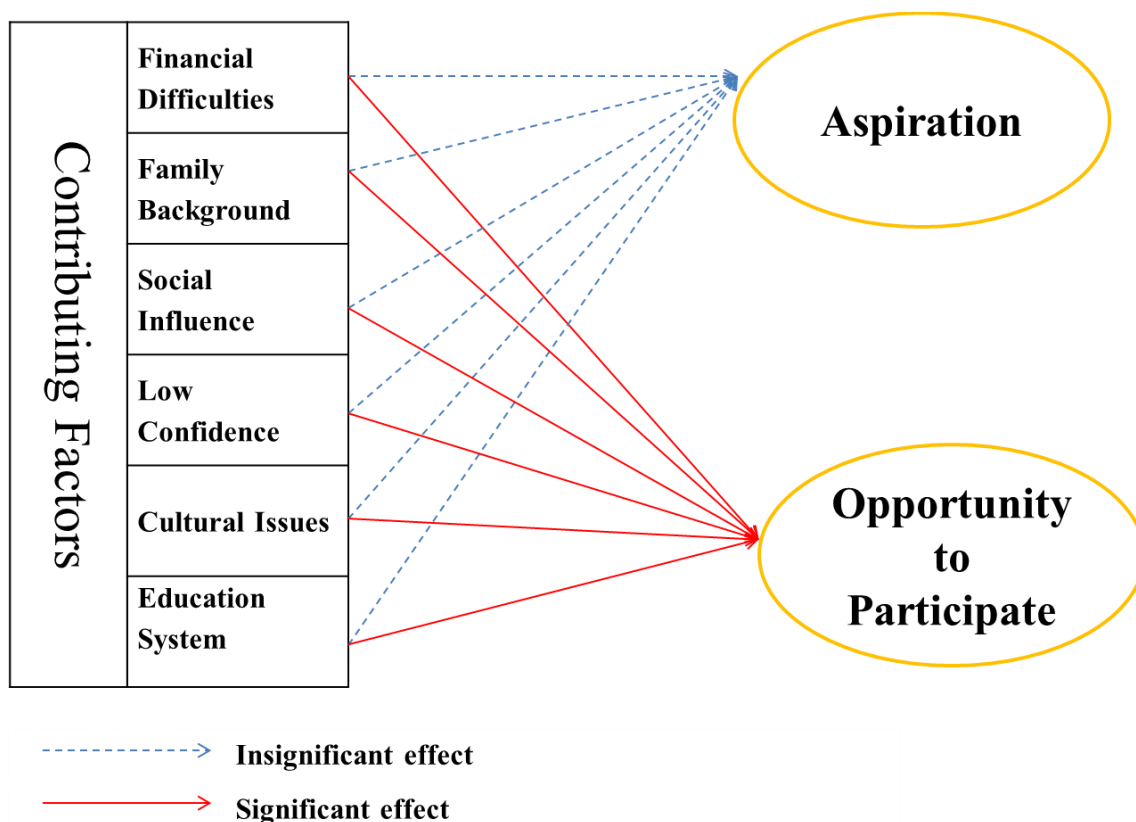


Figure 4.7 Conceptual Model Indicating Impacts of Contributing Factors on Barriers

Chapter summary

This chapter presented the findings derived from the data collected for this study. In summary, the findings suggested that VET-LSEG students in Malaysia understood the benefits of HE and strongly aspired to HE. The students were also found having a strong desire to participate in HE after completing their HE studies. The study established six major factors associated with barriers affecting students' progression to HE; the financial difficulties, family background, low confidence, social influence, cultural influence, and the education system.

It is important to note that, gender has not been explored as a barrier to HE in this study. The decision to exclude gender as a contributing factor to barriers was made in relation to the findings of the literature review process, which suggested gender is a less significant factor in affecting the VET-LSEG students' pursuit of HE, for example in the

Ninth Malaysia Plan (2006a), the Tenth Malaysia Plan (2010c), as well as previous studies including Rosman & Hamzah (2012), Abdul-Hassan, Ishak, Yusof & Abdul-Rahim (2005), and Suruhanjaya Hak Asasi Manusia Malaysia (2010).

The following two chapters focus on the development of strategies that assist VET-LSEG students to overcome barriers to HE making it more accessible to these students. The practices and operations in a Malaysian HE institution which has successfully admitted VET-LSEG students for HE studies is presented as a case study in Chapter 5, and informs the suggested strategies.

Chapter 5 Case Study

A Single Case Study was conducted on UML, a HE institution in Malaysia which has been successfully offering VET related progression pathways and admitting VET-LSEG students for HE studies in Malaysia for at least 15 years. The purpose of the case study was to examine and demonstrate the factors required and challenges encountered by a HE institution offering VET related progression pathways and admitting VET-LSEG students for HE studies successfully in Malaysia.

As it was presented in Chapter 3, a three-stage investigation design was developed to guide the investigations. The case study provided insights and useful information which enabled the formulation of generalizable strategies that could help HE institutions in Malaysia, especially the MTUN institutions, to both develop and offer VET related progression pathways to VET-LSEG students effectively, and to provide relevant support and assistance to the VET-LSEG students to enable them to succeed in their HE studies.

The institution-UML

According to the corporate information published on the institution's website, UML is a Malaysian HE institution incorporated under the Private Education Institution Act 1996 and operated under the governance of the Ministry of Higher Education in Malaysia (Education Act 1996, 2006). UML was first established in 2002 under the Seventh Malaysia Plan which promoted the growth of HE and VET in Malaysia (Economic Planning Unit, 1996). Being a private university, UML is wholly owned by the Majlis Amanah Rakyat (MARA), a government agency operated under the governance of Ministry of Rural and Regional Development (MRRD). As in the case for other MARA owned institutions, UML is managed by the Universiti Teknikal MARA Sdn Bhd, another commercial corporation under MARA Group (Majlis Amanah Rakyat (MARA), 2013).

According to the institution's promotion brochure and internet homepage, UML was formed through incorporating more than ten skills training institutions scattered

around Peninsular Malaysia into forming a multi-campus university. Each of the incorporated institutions specialised in a different field of study, and maintained their specialization and location after incorporation as a specialised branch-campus. As a result of these specializations, UML is able to offer a wide range of MQA approved technical programmes such as engineering technologies and automotive technology programmes, and non-technical programmes such as business management and accounting, from foundation to undergraduate and postgraduate levels to students from wide geographical areas. Being a private university also allows UML to admit both the Malaysian students and international students from around the world. The multi-specialization and multi-site operations allow UML to cater for the needs of students from wide backgrounds and wide geographical areas.

Over the years, UML has reported encouraging performance not only in offering tertiary education but also in their engagement in industrial collaborations that contribute to industrial innovation and economic advancement. Up to 2015, UML had also housed close to 40,000 students who went on to work in various industries in Malaysia and around the world, while also housing close to 30,000 students who were studying various programmes ranging from foundation to postgraduate levels. With the support obtained through its affiliations and industrial relations, UML is heading forward confidently to becoming one of the leading universities in Malaysia.

The successful performance of UML, especially in offering progression pathways to VET-LSEG students, makes it an exemplar institution to other HE institutions that are either contemplating or currently not willing to offer progression pathways to students with skills backgrounds. Thus, it is the purpose of this case study to describe and showcase the capacity and operations that make progression pathways possible at UML. As discussed in Chapter 3, however, the multi-branch campus background of UML and its complicated operation made it costly and time consuming for the researcher to conduct an in-depth and thorough study. Thus only one branch-campus will be adopted for investigation, and the selected branch campus is referred to as UMET in this study.

UMET

UMET is one of the branch campuses under the umbrella of UML. According to the corporate information published on UMET's website, UMET was first established as a skills institution under Seventh Malaysia Plan in 2002 and was later upgraded to a private university and incorporated as one of the biggest higher learning institution under UML.

Organizational Structure

UMET specialises in Marine Engineering Technology and is one of the few HE institutions in Malaysia producing a specialised workforce to the marine and maritime industry, either within the country or internationally. As a government accredited institution, UMET offers a state of the art campus providing innovative and specialised facilities in order to facilitate effective teaching and learning experiences to students. Other than the academic buildings incorporating lecture rooms and practical laboratories, the campus also offers specialty infrastructure and facilities including ports, shipyards and vessels that are needed for marine and maritime education and training.

Primary operations

UMET's course prospectus shows that UMET offers marine and maritime programmes from certificate to Bachelor degree levels. Other than the HE programmes offered under the accreditation of the Malaysian Qualifications Agency (MQA). UMET also offers technical and professional short training programmes that meet the technical requirements and professional accreditation standards of the marine and maritime industry in Malaysia, such as International Ship Classification Societies and other relevant statutory bodies. Since its incorporation in 2002, UMET has grown extensively, from a humble skills training centre with less than 100 students recorded in 2004 to a MQA accredited university reporting more than 2000 enrolments per year since 2010.

Factors contributing to UMET's success

The Head of School from UMET associated UMET's success to its development background and useful affiliations. Specifically, UMET's background and affiliations that enabled it to develop flexible policies and effective strategies that catered to the needs of wider spectrum of students, especially those with alternate education backgrounds such as the VET or skills students. The review of administration reports and the corporate prospectus of UMET, and interviews with other UMET personnel such as the Course Coordinators and chief administrators, confirmed the claim of the Head of School and further revealed another two advantages, helpful collaborations and relevant operating experiences, possessed by UMET that contributed to its success in offering progression pathways to VET-LSEG students. Thus, a total of four advantages were revealed as being associated with UMET's success, these include the suitable background and useful affiliations, helpful collaborations, and relevant operating experiences.

Suitable Background

The conversations with the school leaders, including the course coordinators and Head of Schools, show that the VET background of UMET plays a big role in setting the path and driving UMET into offering HE programmes that are suitable for the progression of VET-LSEG students and other students with skills backgrounds. According to the one of the Head of Schools at UMET, the VET background of UMET was first established when it was set up as a skills training institution and operated under the governance of MOE-Division of Technical and Vocational Education (MOE-DTVE). The VET background of UMET was later enhanced during its operations offering specialty skills training programmes to VET students and collaborating with employers and practitioners from the related industry.

Though UMET was later upgraded to a university operating under the governance of MOE-Division of Higher Education, the influences of its VET background remained as it established itself as a HE institution, especially in the drafting and implementation of UMET's development policies and operational strategies.

Development Policies

The VET background enabled UMET to have a better understanding about the structure and quality of VET or skills training, which subsequently helped it to maintain positive perceptions of VET institutions, and also students with skills or VET backgrounds. This positive perception motivated UMET to take the initiative to approach VET institutions and to promote HE programmes to students in these institutions. These voluntary approaches enabled UMET to provide guidance and to disseminate important information, via printed documentation such as brochures and posters, or through educational seminars and counselling sessions, about the HE programmes available at UMET.

According to the Head of School, the information and guidance provided by UMET was important to both the VET institutions and the VET-LSEG students. To VET students, clear information about the available progression pathways and suitable HE programmes provided assurance about the opportunity to study, which was crucial in both creating strong aspirations for HE, and strengthening their confidence which increased their desire to pursue HE after completing their VET programmes. The updates and information provided to the VET institutions by UMET equipped them, especially the VET teachers and counsellors, with better knowledge for counselling and preparing VET-LSEG students to apply for admission to HE after completing their VET studies.

UMET was also found to have collaborated with VET institutions, especially vocational colleges, to conduct events and activities that targeted both students and parents. These activities included education roadshows and information sessions aimed at both creating awareness about the importance of HE, and providing information about the assistance and support available at UMET. The Head of School explained that such information was also helpful in motivating the parents to encourage their children to continue to HE, and in providing parents with greater confidence to send their children to continue their studies with UMET. The information was also especially helpful to

VET-LSEG students and their parents in rural areas that had limited access to updated information about HE and the assistance that is available.

The UMET's initiative of approaching the VET institutions and their students as well as the students' parents revealed UMET's commitment in offering progression pathways to VET-LSEG students. This commitment was important in strengthening the confidence and desire of VET-LSEG students to pursue HE. In addition, with the clear information and guidance provided, these development policies actually made UMET both an obvious and easier choice for VET-LSEG students to pursue HE, especially in comparison with other HE institutions that showed reluctance in accepting students with skills and less academic backgrounds.

Operating strategies

UMET's VET background resulted in it developing a more receptive attitude towards VET and students with skills or VET backgrounds, which is again important to such students, especially during the admission stage. This receptivity was evidenced in UMET's friendlier attitude when attending to enquiries from VET institutions and the students in these institutions. Such attentiveness showed the seriousness of UMET's interest in considering and accepting applications from students from skills or VET backgrounds, which was important in motivating VET-LSEG students and assuring them of the progression opportunities available at UMET. The attentive attitude also resulted in UMET looking closely at the needs of the VET institutions and their students, in order to provide them with better guidance suited to the needs of the individual institutions and students. Such receptivity and attentiveness was important in raising the aspirations and motivation of VET-LSEG students to pursue HE studies, especially in view of the fact that these students had been neglected by other traditional HE institutions that showed little interest in admitting them.

UMET's receptive attitude also enabled them to be more objective when assessing applications from students with skills or VET backgrounds. This is important to VET-LSEG students especially as their applications are usually dismissed or rejected by traditional HE institutions due to their less academic backgrounds. UMET's receptive

attitude avoided bias against VET-LSEG students while their objective attitude enabled them to assess the students' application fairly without stereotyping. In this regard, VET-LSEG students could be assessed according to their VET achievements alongside other applicants with academic backgrounds instead of being rejected or offered leftover or unwanted opportunities by other applicants with academic backgrounds.

Other than being receptive and practicing objectivity in assessing and admitting VET-LSEG students, UMET was also found to have listed relevant VET qualifications, especially the vocational diploma, as part of the formal entry requirements to study their bachelor degree. The inclusion of VET qualifications in this may resulted in at least three advantages to VET-LSEG students. First, it provided them with more assurance with regards to the available and suitable progression pathways. Such assurance strengthened students' aspirations and desire to pursue HE. Second, it provided VET-LSEG students with clearer target to work towards, which strengthened their confidence in planning and applying for admission to HE. Third, the clear targets also motivated students to work harder in their VET studies in order to achieve good results that enable them to achieve the entry requirements of UMET.

In addition, the formal inclusion of VET qualifications as part of their entry requirements, enables UMET to include these requirements in their promotional materials and to reach out to more VET institutions from wider geographical areas. This is especially important for those VET-LSEG students in rural areas that have limited access to information about HE offered through HE institution in Malaysia.

In summary, in regards UMET's background suitability, the case study revealed that its VET background provided UMET the necessary knowledge and attitudes to build a HE environment which appeared attractive and welcoming to VET-LSEG students. These factors built mainly on UMET's receptive and objective attitudes towards students with skills or VET backgrounds. Such attitudes inspired UMET's operating policies and development strategies that subsequently built the institution's capacity to motivate VET-LSEG students to apply to the institution, and to admit them to HE studies. Such attitudes and values have contributed to UMET's success, and are

worthy of note and promotion to other HE institutions that are looking to duplicate the same success, and attract and admit VET-LSEG students to HE studies.

Useful Affiliations

In addition to being a recognised university operating under the governance of Malaysian Ministry of Education, UMET has useful affiliations with certain governmental institutions and relevant industrial partners that contribute to its success as an HE institution in Malaysia, especially in offering effective HE to students from varied backgrounds. These affiliations provide support that help UMET's institutional development and its implementation of operational strategies. The most significant affiliation contributing to UMET's success as a more accessible HE institution to the VET-LSEG students in Malaysia, is its affiliation with the Majlis Amanah Rakyat (MARA).

According to MARA's official website, it is a government agency operated under the governance of Ministry of Rural and Regional Development (MRRD). The connection with MRRD enables MARA to receive regular funding for its operations, especially in supporting and developing its affiliated organizations and institutions, such as UMET (Majlis Amanah Rakyat, 2016). Thus, being a MARA affiliated institution provides UMET at least two advantages. Firstly, it allows UMET to operate under the regular funding and grants provided by MRRD and secondly, it provides UMET with an enhanced reputation in the country.

Operating under MARA funding

As a MARA affiliated institution, UMET receives regular financial support distributed from the Malaysian government through the MRRD. This regular funding is crucial to UMET to support both its operating and maintenance costs, and to enable it to build the necessary facilities and infrastructure. Under the constant financial support provided through MARA, UMET is able to operate comfortably as an effective HE institution, and to offer its programmes or courses at a sponsored rate, which is relatively

cheap compared with similar programmes offered through other private institutions in Malaysia.

The affordable fee rates are important to VET-LSEG students, especially in view of their financially disadvantaged backgrounds. In addition, the financial provisions also enable UMET to have more financial power to offer extra support that help students, especially those with problems coping with HE studies, to achieve better learning outcomes in their studies. Such support includes extra tuition classes and mentoring, both of which have proved useful at UMET in helping VET-LSEG students to catch up with their HE studies. Such embedded support also motivates and guides students to study seriously and effectively in order to complete their HE studies successfully.

Furthermore, the MARA has regular allocation for education funding, especially to students studying at its affiliated institutions, which includes scholarships and education loans. This financial allocation is significant for VET-LSEG students as it creates another source of financial assistance for them if they get admitted to study at UMET. This financial support source is especially important in view of the fact that there is a lack of financial assistance available to skills students as most, if not all, scholarships in Malaysia are awarded based on academic merit (StudyMalaysia.com, 2015; Tham, 2010).

Operating under MARA affiliation

Being affiliated with MARA portrays UMET as a government affiliated institution which enhances UMET's image when compared with other private HE institutions in Malaysia. Such an image provides UMET with a better reputation in both education and industrial circles, which is especially helpful in establishing useful cooperation or collaborations with other education institutions or commercial partners in relevant industries. This improved image and enhanced reputation found to benefit both the development of UMET, and its students or potential students. The improved image and reputation also benefit VET-LSEG students who are admitted to study at UMET as it indicates that these students will obtain a quality education and will be graduated with recognised qualifications from a reputable HE institution in Malaysia.

Helpful collaborations

In addition to the affiliation with MARA, UMET has also developed useful collaborations that have helped build its academic and operational strengths. Effective collaborations bring benefits not only to UMET but also to its students and graduates. According to the responses provided by the UMET's Head of School and evidence contained in UMET's administration reports, its significant collaborations have usually been made with other education institutions and commercial partners from industries that are relevant to the field of studies offered at UMET.

Collaboration with other education institutions

UMET collaborates with institutions ranging from secondary schools to vocational institutes and universities in Malaysia and internationally. The effective collaboration with established institutions have enabled the exchange of intellectual expertise that have helped UMET develop its research capacities and improve its education programmes. Such improvements and developments provide UMET with the capacity to build stronger academic credentials and institutional image, and to offer quality programmes and reputable qualifications that are comparable with those of the established institutions.

In addition, collaboration with established HE institutions also enables skills exchanges, especially in regards operating procedures and teaching practises. This exposure is helpful to UMET in improving both its teaching and operating practices. In addition, such exposure also enables UMET to develop new teaching or operating procedures that are compatible with those adopted by leading institutions. Consequently, UMET provides quality teaching and effective student support that is helpful to VET-LSEG students who are admitted to study at UMET, enabling them to study more effectively and achieve better learning outcomes.

Through their collaboration with VET institutions, UMET gains relevant knowledge regarding the latest developments and current issues experienced by VET institutions and VET students. Such knowledge enables UMET to have better

understanding and hence more accommodating to VET institutions and their students. As a result, UMET has been able to design and offer HE programmes that are suitable for the progression of VET-LSEG students, and to incorporate effective teaching practices that are sensitive to the needs of VET-LSEG students. Hence, the VET-LSEG students are provided with progression pathways and effective learning systems which help them to complete HE successfully.

Collaborations with industrial partners

Effective collaborations with commercial partners from relevant industries brings UMET both financial support and access to other expertise and support that is beneficial to both the institution and its current and potential students.

Financial support

The interviews with UMET's student counsellors and students revealed that the financial support provided through the collaboration with industrial partners could be beneficial to VET-LSEG students in at least three ways. Firstly, it created another significant channel for obtaining financial assistance for HE which was important in view of the lack of financial assistance available to VET-LSEG students in Malaysia. Secondly, the fees sponsorship which targets UMET students, also provides VET-LSEG students with a better chance of getting financial assistance, especially compared with the usual scholarships that favour only students with good academic backgrounds. Thirdly, the donations that help to equip and improve UMET training facilities and teaching tools, benefit VET-LSEG students as these donations facilitate a better quality learning environment.

In this regard, as a result of its collaboration with industry, UMET received a significant donation, a commercial vessel from one of the marine companies in Malaysia, to be used for practical training for students studying Marine Engineering Technology. Other than this, other specialist tools which are expensive and difficult to obtain have also been donated by partners of the relative industries. Such donations allow UMET to offer effective and quality education and training to VET-LSEG students that is practical and up to the standards of the relevant industries.

Expertise and support

The conversations with UMET's Head of School and VET trainers revealed that UMET gained access to expertise and support through establishing commercial collaborations with industrial partners. Such collaborations included professional consultation and Research and Development (R&D) alliances. These consultations and alliances have provided UMET with guidance in developing its operations and education or training programmes. Such support has been helpful to UMET in developing its academic strengths, and in designing teaching and training programmes that meet the requirements and expectations of the relevant industries. The Head of School explained that such expertise and skills exchange with relevant industries was essential because most VET programmes were industrially-focused and work-based in design. Through such collaboration, UMET has been able to incorporate the industrial focused and work-based features into their HE programmes. Such exchange of expertise with relevant industries has enabled UMET to design industrially relevant programmes which has enabled students graduated with qualifications that are relevant and recognised by the respective industries.

As suggested by Lievana (2010), a productive alliance produces opportunities to obtain practical experience about the work requirements and operations standards in the relevant industries. In this regard, UMET has managed to initiate collaborations with relevant industrial partners that create On-Job-Training (OJT) opportunities for students. The conversations with UMET's course coordinators and student counsellors suggest that these opportunities have been crucial as they enable students to gain practical experience in a real work environment, and build useful networks with potential employers that can be helpful in gaining employment after completing their studies.

In addition to OJT, the collaborations that UMET engage in have also created training opportunities for its lecturers. These experiences include professional trainings and information sessions conducted by leading industrial partners from relevant industries. Such experiences have been found to be useful in improving the lecturers' technical knowledge and keeping them updated with the latest developments in the relevant industries. These productive collaborations have resulted, therefore, industrially relevant teaching and industrially recognised programmes offered through UMET,

which contributed to the improved employability of its graduates. This improved employability can be a significant factor in motivating VET-LSEG students to pursue HE at UMET.

Relevant experience

UMET's history as a skills training institute has also provided it with the required knowledge and experience to operate as a friendly HE institution to students from VET backgrounds, especially those who wish to pursue HE after completing their VET training. Such previous experience has provided UMET with at least two advantages; a good understanding about VET and a good understanding about VET students.

Good understanding about VET

Over the years, UMET has developed the knowledge and experience that has enabled it to design and offer VET programmes. According to UMET's Course Coordinators and Head of Schools, this knowledge and experience has provided the institution with a good understanding of the course content and nature of VET programmes. This understanding has been useful in the design of HE programmes that are relevant and suitable for progression of students from skills background, including VET-LSEG students. The availability of relevant HE programmes is significant to VET-LSEG students as it improves their chance of identifying programmes that are suitable for their progression.

In addition, an understanding of the structure of VET programmes has also enabled UMET to identify the relevant intellectual and technical gaps that have caused VET-LSEG students difficulties in coping with HE studies in the past. Their extensive understanding about the educational gap has enabled UMET to design supportive learning programmes that help to narrow these gaps. By way of example, UMET designed and implemented an extra tutorial programme with aim of narrowing the learning gap for students from skills backgrounds, like the VET-LSEG students. According to UMET's Head of School, this extra tutorial programme covers subjects identified as either not being taught or not sufficiently covered in VET programmes, but

that are necessary for HE learning at UMET. The absence or lack of coverage of subjects like science and mathematics in VET for example, usually results in a gap between the requirements for HE studies and the capabilities of VET students.

In order to narrow such a gap, the extra tutorial programme that is provided focuses on training and equipping these students with the missing knowledge. According to UMET's Head of School, the extra tutorial programme is helpful in assisting students to both narrow their knowledge gap and provide them with a stronger academic foundation for higher level learning. This perception was verified during interview with existing UMET students. This extra tutorial programme has been effective for VET-LSEG students, especially in view of their education backgrounds which has necessitated extra support for their academic learning.

Prior knowledge and experience of VET education has also enabled UMET to both evaluate and assess VET qualifications, and to formally include relevant VET qualifications as part of their entry requirements. As a result, applications for entry to UMET from VET-LSEG students are assessed fairly and with equal favour as other applicants with academic backgrounds. This process provides VET-LSEG students with better opportunities to study HE programmes at UMET.

Good understanding about VET students

Its history as a skills training institution also provided UMET with a better understanding of VET students compared with many other HE institutions in Malaysia. In this regard, UMET has good understanding of the students' attitudes to learning and their capacity to cope with HE studies. Such knowledge underpins their programme design as well as their teaching and learning support which is relevant and sensitive to the needs of the students. The interviews with UMET's teachers and students revealed that, the teaching and learning support that is available is significant not only in improving students learning but also in motivating their desire to achieve better learning outcomes. As a result, VET-LSEG students studying at UMET have benefitted due to their increased chance to not only complete HE successfully, but also to score good results.

The extensive understanding of VET students also enables UMET to display better knowledge about the students emotional needs and other personal problems that could affect their studies. As a result, they have developed strategies, including support groups and mentor programmes, that help students deal with any emotional and learning problems. UMET's student counsellors indicated that such support is especially useful to VET-LSEG students who have to leave home to study in a new city, as it helps the students to cope with their emotional stress, and keep them motivated and focused on their studies. Students reported that the support system also contributed to their educational experience, as it motivated them to pursue other higher level education or relevant professional programmes after completing their studies at UMET.

Challenges of UMET

The case study also examined the internal weaknesses and external factors that UMET had to deal with despite its reported success in offering HE programmes suitable to the progression of VET-LSEG students. The major challenges UMET faced related to organizational structures, stakeholders within UMET including lecturers and students, and external policy maker and/or stakeholders, especially those who worked collectively with UMET in offering HE pathways relevant to progression of VET-LSEG students. An in-depth investigation and analysis highlighted four major challenges for UMET; expensive operating costs, lack of qualified teachers, poor language skills of students, and constantly changing educational policies.

Expensive operating costs

The high financial cost of offering progression pathways relevant to VET-LSEG students has been a challenge for UMET. Middleton (1998) pointed out that offering VET related programmes is a challenge to most institutions as the programmes are costly to run. The high running costs of VET HE programmes occur as a result of the cost of teaching equipment and setting up the teaching facilities, as well as in hiring the suitable and qualified teaching staffs. In addition, maintenance of the teaching equipment and facilities is ongoing and requires substantial expense. These costs are

comparatively high when the VET programmes are technically related and involved specialist technologies, either in its teaching materials or training grounds. According to UMET's Head of School, such significant expenses is one of the major challenges encountered by UMET.

The technically related and highly specialised VET-related HE programmes offered by UMET requires both specialist knowledge, in order to design and develop the curriculum, and specialist teaching equipment and training tools, in order to run these programmes. The study found that due to the nature of UMET's specialty programmes, most of the teaching equipment and training tools are not only expensive but also hard to acquire in Malaysia. These hard to acquire items usually require special order and delivery from foreign suppliers or manufacturers in foreign countries, and the costs associated with this add to the running costs of the relevant programmes.

While the costs incurred in the acquisition of expensive teaching equipment and training tools was found to be difficult to bear, the maintenance costs of such items also posed a significant challenge to UMET. In this regard, UMET explained that the high maintenance costs were due to the fact that the teaching equipment and training tools require both regular checks to ensure its proper functioning, as well as regular upgrading and/or replacements when new technology is introduced. As most of the equipment and tools are technically specialised, the maintenance work is usually done by an expensive external servicing company, and the upgrading or replacement demands special orders and deliveries that can be as expensive as or greater than the costs of the original equipment.

While its affiliation with MARA has enabled UMET to receive regular funding in support of its operations, this limited finances usually covers only the regular operating costs, such as the capital costs like building maintenance, and overhead costs like employees' salaries and administrative costs. With the limited funding which hardly covers the UMET's regular operations, the acquisition and maintenance costs of expensive specialist equipment and tools have undeniably added significant pressure to the financial burden of UMET every financial year. UMET's financial struggle is especially obvious in its inability to put one of the commercial vessels donated by

industrial partner to use, for students' training, due to the high operating and maintenance costs. Such financial burden has raised concerns within UMET in regards its continued operations and its capacity to offer good quality VET-related HE programmes resourced with essential learning tools and teaching equipment.

Lack of qualified teachers

UMET's course prospectus shows that the VET-related HE programmes it offers tie closely with the changes in technology in the related industries. This technological tie requires UMET to keep up to date not only the teaching equipment and training tools but also the programme contents and curriculum. While the requirement to keep abreast of such technological developments has caused significant stress on the management of its financial resources, UMET has also found this to pose significant challenges for its management of human resources. This has been especially significant for recruiting the right people for the right work position, and providing the recruited people with appropriate training in order to keep them abreast of the knowledge and skills related to the technology changes occurring in the related industries.

Recruitment of the right people

UMET's Head of Schools suggested that the challenge in recruiting the right people was mainly caused by the type of HE programmes offered through UMET, which are industrial focused and technically intensive. UMET is required not only to recruit staff with the right academic qualifications but also with the necessary expertise relevant to the related industries. Relevant academic qualifications are not only required in order to teach the industrially focused and technically intensive curricula effectively, but are also a mandatory requirement of the Ministry of Education. Industrially relevant expertise is essential in enabling the staff to have the necessary knowledge to both teach the technically intensive curriculums, and to demonstrate the use of relevant equipment and training tools.

Recruiting teaching staff with necessary qualifications and relevant expertise, however, has been a challenging for UMET because their programmes are related to specialised industries which require niche specialties. People with the right

qualifications and expertise have usually found career opportunities in the commercial market which provide them with more lucrative incomes and better career prospects as compared with lecturing jobs in education institution. People with relevant and up-to-date technical expertise usually have successful careers in the related industry, and hardly show interest in taking up teaching job in education institutions. Though it is not impossible to recruit these professionals or experts, the relevant expertise and technical skills usually results in them being expensive and difficult to hire. In addition, such professionals and experts have also been found to have high tendency to return to the commercial world, especially when lucrative job offers become available. This makes them both a risky and less desirable group of people to hire for the teaching jobs. The study found that two groups of people are more commonly hired for teaching jobs in UMET, new university graduates with the relevant qualifications, and retirees from the relevant industries.

UMET has found that new university graduates, especially those studying and graduating either through UMET or other MARA affiliated institutions, are easier to hire than the experienced professionals in the relevant industries. Job positions are offered either directly to students graduating with relevant and good academic performance or to new graduates who are applying for the teaching positions. The relevant qualifications and knowledge make these fresh university graduates the preferred group for teaching positions. Though these new graduates have relevant academic qualifications, however, they usually have no real world experience. Most of these fresh graduates lack updated knowledge and technical skills that are relevant to the actual practices and latest technology development in the relevant industries. Though their knowledge and skills deficits can be overcome through extra training, such training is not only time consuming but also financially burdensome for UMET. This study also found that extra training rarely results in more effective teachings skill among these fresh graduates.

The retirees from the relevant industries recruited by UMET to teach highly specialised and technical subjects in many of its VET-related HE programmes, are hired because of both their expertise and knowledge, as well as their industrial experience working in the relevant industries. Such background has been found to enable them to

teach the relevant knowledge and skills, and to open up the students' eyes to the actual operation of industry in the real world. Though the retirees always come with the necessary knowledge and skills, their relevant expertise and experience also make them expensive to recruit. In addition, the retirees rarely come with any effective teaching or training skills which means extra training, especially with regards teaching skills, are still required in order to prepare them as effective lecturers, which has again been found to be time demanding and financial burdening practices to UMET.

Upgrading existing teaching staff

While recruiting new teaching force with the required knowledge and skills has been a challenge to UMET, the requirement to maintain updated knowledge and skills of the existing teaching force is an equally challenging task. This requirement is especially important in view of the close relevance and high sensitivity of UMET's HE programmes to the changing technology in the related industries. Staff training is therefore essential in both updating their knowledge about the latest technological developments, and in equipping them with the technical skills linked to the latest technology advancements. Such capabilities are essential to the delivery of education that equip students with up-to-date knowledge and appropriate skills to handle the new equipment and tools.

Though regular professional training is essential, it has been found not to be an easy task to accomplish. UMET has found it a challenge to locate and hire the right training providers or resources. In view of the industrial relevance of the HE programmes, the most effective training source that can equip UMET teaching staff with the relevant knowledge and updated skills is the industry itself. Due to the involvement of highly specialised skills and sometimes patented technologies, however, such training is not easily available. The study revealed that UMET has been required to make special arrangements and to establish collaborations with specific companies or industrial partners in the relevant industries, in order to make these training arrangements possible. UMET has found such arrangements to be costly and time consuming for both, them and the involved industrial partners.

UMET also found the staff training a challenge to organise. The training usually takes place at the work site or factories of the involved industrial partners, where all the equipment and technologies are located. Arranging the training site and scheduling dates that are suitable for both UMET's staff and the involved industrial partners can be tedious and time consuming. The requirement to conduct the training at the actual work site also requires UMET to send staff to the industry partners' work sites which could be located in a different state or offshore in a different country. Thus, the costs involved in sending teaching staff for training include not only the travelling fees and other direct expenses such as accommodation and food, but also the cost of hiring replacement staff to backfill the teaching. These factors have posed significant challenges for UMET, especially in view of their limited staff force and tight budgets.

UMET has also not always found it easy to get consent from the industrial partners to conduct trainings due to both the potential of leaks about the partners' technical secrets and expertise, as well as the inconveniences and troubles, which could result in economic loss caused to the partners' workflows during the on-site training. In this regard, UMET has found that successful collaborations or training agreements could be secured with the help of government interventions. In most cases, the involved industrial partners have been motivated to conduct the training by receiving certain economic advantages like subsidies or tax relief from the government. Thus, not only is the reluctance of the industrial partners a significant challenge that UMET has to overcome, but the requirement to make a successful proposal to the government in order to obtain their intervention is yet another time consuming and significant task that they have to undertake in order to make the training arrangement possible for their teaching staff. These challenges were found to be significant factors working against UMET's desire and efforts in arranging the required training for its teaching staff.

Poor language skills of students

UMET's teachers and student counsellors revealed that there was no significant problem with regards to the aspirations and learning attitudes of their existing students from VET-LSEG backgrounds. According to them, these students were mostly

motivated to study to complete their HE programmes successfully. The relevant VET backgrounds and earlier skills trainings of these students was also found to have equipped these students with certain levels of foundation knowledge and skills to enable them to study the relevant subjects in their related HE programme at UMET.

Though their previous VET experience has equipped the VET-LSEG students with basic technical knowledge and skills helpful for their HE studies, it has not equipped them with the necessary language skills, especially the English language, which is used as main communication medium in both teaching and assessment practices at UMET and also most HE institutions in Malaysia. According to UMET's teachers, most VET-LSEG students struggle to understand the teaching which is taught in English, to read the learning materials that are mostly printed in English, and to write their assessment tasks in English.

Such weak English language skills among VET-LSEG students was found to be due to the students' lack of exposure to English language. Other than the fact that English is not the first language in Malaysia, this lack of exposure may also be due to both their LSEG and VET backgrounds. In this regard, VET-LSEG students have mostly grown up in non-English speaking families and also among a non-English speaking community that communicates mostly with Malaysia or native languages. This lack of exposure to the language during the early childhood has not only deprived them of the opportunity to build the preliminary knowledge in English language but also reduced their need to learn the language.

The VET-LSEG students' lack of exposure to English language continues as they progress to the primary and secondary school and then skills institutions where English is again not the main communication medium in either the classroom or school activities. Though English is taught as one of the language subjects in both the primary and secondary schools, it is not a mandated study requirement and students are not expected to excel in the subject. This situation is not helpful either in developing students interest in learning the language nor in equipping them with the necessary comprehension and writing skills that meet the requirements of HE learning. The fact that all programmes in public funded skills institutions, including the vocational

colleges, are conducted in Malaysian language has not only further deprived the VET-LSEG students of the opportunity to learn the English language, but has also resulted in them building their learning foundation and skills knowledge, including the technical terminologies and principles, in Malaysia language.

The weak English language skills and foundation knowledge built mainly in Malaysian language has caused significant problems for VET-LSEG students in coping with the HE learning which is conducted in English at UMET. Not only the students face problems understanding the teachers and study materials, but they also face problems in communicating ideas and in presenting their work in writing. Though UMET provides language support classes to help boost their language skills, VET-LSEG students have little capacity to pick up the language effectively due to their weak foundational knowledge. The lack of language proficiency has not only caused these students' greater difficulty in passing their subjects but has also demotivated their learning at UMET.

Constantly changing education policies

It is evident in the MOE website and the various Malaysia Plans over the years, that the VET system in Malaysia has undergone constant change. These changes have taken place to both keep up with the workforce demand of developing industry and to keep up with the government's strategy to develop the education system and make the country an education hub in the South East Asian region. Due to the clear management division between the VET and HE systems in Malaysia, however, the changes that have been implemented in the VET system have rarely been communicated to the HE system. This lack of information has caused difficulties to HE institutions like UMET, not only in understanding the operations of VET but also in keeping up with the changes taking place with the VET institutions.

The conversations with UMET's Head of School, later confirmed by UMET teachers, revealed that the main challenge encountered in this regard came both from the constantly changing VET policies and the lack of information about the impact of these new policies. According to UMET's Head of School, the lack of information has not

only resulted in confusion about the structure and operations of the VET system but has also caused problems to other education systems in collaborating with the VET system. To illustrate the case, the Head of School identified two major policies that were recently implemented and caused significant changes to Malaysian VET institutions but for which no information was provided to other education divisions, especially the HE system. The two policies were the upgrading of public vocational schools and the implementation of the MTUN strategy which formally established four public funded universities to offer VET-related HE programmes.

Upgrading of public vocational schools

The first policy identified by UMET in this regard was the policy upgrading all publicly funded vocational schools to vocational colleges. This policy has upgraded not only the publicly funded VET institutions to Vocational Colleges, but also the certification awarded through these institutions from Skills Certificates to a Vocational Diplomas. This policy has resulted in confusion which affected both current operations in UMET, and their future planning with regard their VET related HE programmes, particularly in relation to the real value of the Vocational Diploma. According to UMET's Head of School, until clearance and formal notice is provided by the MQA, the real value and creditability of the Vocational Diploma remains in question, especially when compared with academic diplomas and certificates granted through the traditional universities in Malaysia.

As VET is commonly perceived as lower level education in Malaysia, without clear guidelines, these new Vocational Diplomas will be perceived as less valuable and less recognisable academically, especially when compared with similar level diplomas awarded through traditional universities. For example, when comparing the Diploma in Automotive Engineering Technology from a VET institution to the Diploma in Automotive Engineering awarded by the traditional university, the former is less recognizable and is be of less academic value than the latter.

UMET's Head of School claimed, therefore, that it is important to determine the value of the Vocational Diploma so that they are able to judge the qualification that VET-LSEG students graduated with. Such certainty would enable UMET to determine

the students' eligibility to enter the HE programmes at UMET, and help the students to claim appropriate credit or exemption for their qualification. The current vague policy has not only been unhelpful to help VET-LSEG students in gaining offer from HE institutions to pursue higher level studies, but it has also impeded the HE institutions' capacities to develop and implement strategies that assist VET-LSEG students' progression.

Implementation of MTUN universities

As mentioned in Chapter 2, the MTUN is a reintroduction of a previously developed strategy that brought together a group of four Malaysian HE institutions focused on offering technical and VET related HE programmes (Malaysian Technical University Network (MTUN), 2015). Thus, MTUN itself is a network system, and the four institutions grouped under the MTUN network are the MTUN-associated universities. While the revival of MTUN helps to create more certain progression pathways for students with skills or VET backgrounds, the existence of MTUN has also created ambiguities that raise concerns amongst other HE institutions. This is especially true of institutions like UMET which offer VET-related HE programmes targeting the progression of a similar group of students from a skills or VET background. In this regard, interviews with UMET's management and administrative staff revealed two major ambiguities in regards the MTUN and its associated institutions, that have caused significant concerns to UMET, especially the identity of the MTUN and its operations.

UMET believes that the identity of MTUN is not clearly defined or informed by the government. According to UMET, determining the identity of MTUN is important in view of both the clear division that exists between the VET and HE systems in Malaysia, and the fact that the MTUN has been established with aim of enhancing progression pathways to students with skills or VET backgrounds. Defining MTUN's identity helps not only to position MTUN and its associated institutions in the education system, but also helps to identify their association with other education institutions in Malaysia. This is significant as it enables MTUN and its associated institutions to operate cohesively with other education institutions and establish mutually beneficial collaborations with other education institutions in Malaysia.

The fact that MTUN's identity remains ill-defined, however, impacts upon the MTUN and its associated institutions' ability to develop useful collaborations with other education institutions, and creates confusion for other institutions in Malaysia, like UMET that also offers VET-related HE programmes. This confusion arises especially on the extra values and advantages that MTUN provides to its associated institutions, and the disadvantages cause to other institutions for not being associated with MTUN. According to one of the UMET's Marketing Managers, it is necessary to iron out these issues as they affect both UMET's current operations and their planning and development. Thus, clear information about the MTUN and its associated institutions was deemed to be essential for the benefit of the MTUN and its associated institutions, and also the other Malaysian HE institutions currently offering or planning to offer VET-related HE programmes.

The second ambiguity about the newly established MTUN and its associated institutions relates to the operation of MTUN's associated institutions. In this regard, UMET has concerns about the range of programmes being offered through these institutions, the entry requirements used to assess applications, and the type of certifications provided through the completion of HE programmes. One of UMET's Head of Schools explained that a good understanding of the operating practices and standard procedures of MTUN institutions will be important as it will enable UMET and other HE institutions the opportunity to evaluate their own practices and make the necessary adjustments. This will enable all involved institutions to operate effectively in the environment and provide VET-LSEG students with easier access to a cohesive HE system.

The fact that this information has not been clarified has not only created problems to MTUN institutions to operate cohesively within the current Malaysian HE system, but has also provided MTUN institutions an identity which is different from other traditional HE institutions in Malaysia, for example a vocational university. In view that VET education is generally perceived as second rated compared to the traditional academic education, being identified as an vocational university or VET focused HE institution may present a negative image of MTUN institutions. Such an identity may also lead to

negative or inferior images of the students graduating through these institutions. In view of these issues, UMET's Head of School and the Marketing Manager have emphasised the importance of ironing out the operations of MTUN institutions, and also of synchronizing the operations of these institutions in order to make the MTUN institutions part of the Malaysian HE system.

Interpreting the case study data

The data collected in the case study were categorised in three main categories; organizational structure and primary operations of UMET, strengths and advantages contributing to UMET's success, and challenges encountered by UMT in offering progression pathways for VET-LSEG students. The first two categories were analysed mainly to seek generalizable strategies for other HE institutions while the third category contributed ideas towards the formulation of new strategies that could help other HE institutions to develop suitable progression pathways and to offer effective support to VET-LSEG students.

It is important to note, however, that not all data collected are generalizable and transferable to other HE institutions, especially issues identified in the first two categories that consist of factors specific to UMET. If this is the case, alternate strategies relating to similar concepts are required. For example, though UMET was found to benefit from its affiliation with MARA, such an affiliation has proven difficult to establish for other HE institutions due to political reasons. In view of this, the assistance and support received by UMET through MARA would need to be achieved through similar assistance and support processes that could be provided by other government agencies so that similar advantages could be derived.

Chapter Summary

This chapter has provided a summary of the data collected in the case study, in order to contribute the formation of strategies useful in both assisting Malaysian HE institutions to offer effective progression pathways for VET-LSEG students, and to help these students to overcome barriers to attaining HE. Four advantages and strengths were

identified to have contributed to UMET's capacity in offering progression pathways to VET-LSEG students successfully. These include UMET's suitable background, its useful affiliation with other organizations, its effective collaborations with other stakeholders, and its experience in offering suitable progression pathways and student supports. This study also revealed four disadvantages that resulted to challenges to UMET in admitting VET-LSEG students for HE studies. These include the expensive operating costs, the lack of qualified teachers, the poor language skills of students, and constantly changing education policies and strategies in Malaysia. Five strategies to overcome barriers to HE encountered by VET-LSEG students were formulated with reference to data collected through this case study. The details of these strategies are presented in Chapter 6.

Chapter 6 Barriers and Recommendations

This chapter presents the findings of this study while addressing the research questions set for this study; these findings are presented in two sections. The first section presents findings related to Research Questions 1 and 2, with discussions focus on the barriers to HE encountered by VET-LSEG students, and the major factors contributing to these barriers. The second section focusses on Research Questions 3 and 4, discusses the strategies recommended to overcome the barriers, and the role of the major stakeholders in carrying out the strategies successfully. The Research Questions have been combined in this manner because of their close relevance to each other and to enable a coherent flow of discussion. The study concludes with a summary of the major findings for each of these research questions.

Section 1: Barriers and Major Factors Contributing to Barriers

Research Question 1: What are the barriers encountered by VET-LSEG students?

Research Question 2: What are the major factors contributing to barriers encountered by VET-LSEG students?

This study has found that barriers exist for VET-LSEG students seeking to progress to HE, and has associated these barriers to these students' aspirations for HE, and their opportunity to participate in HE studies. This study has also found that the VET-LSEG students' aspirations and their opportunities to participate in HE vary according to various factors, and these factors associate closely to the students' disadvantaged background and education environments. This study has highlighted six major factors that pose significant impacts on these VET-LSEG students' progression to HE: financial situation, family background, social influence, self-confidence, cultural issues, and the education system in Malaysia. Each factor has a different effect on either the aspirations of VET-LSEG students or their actual opportunity to participate in HE (see *Figure 6.1*).

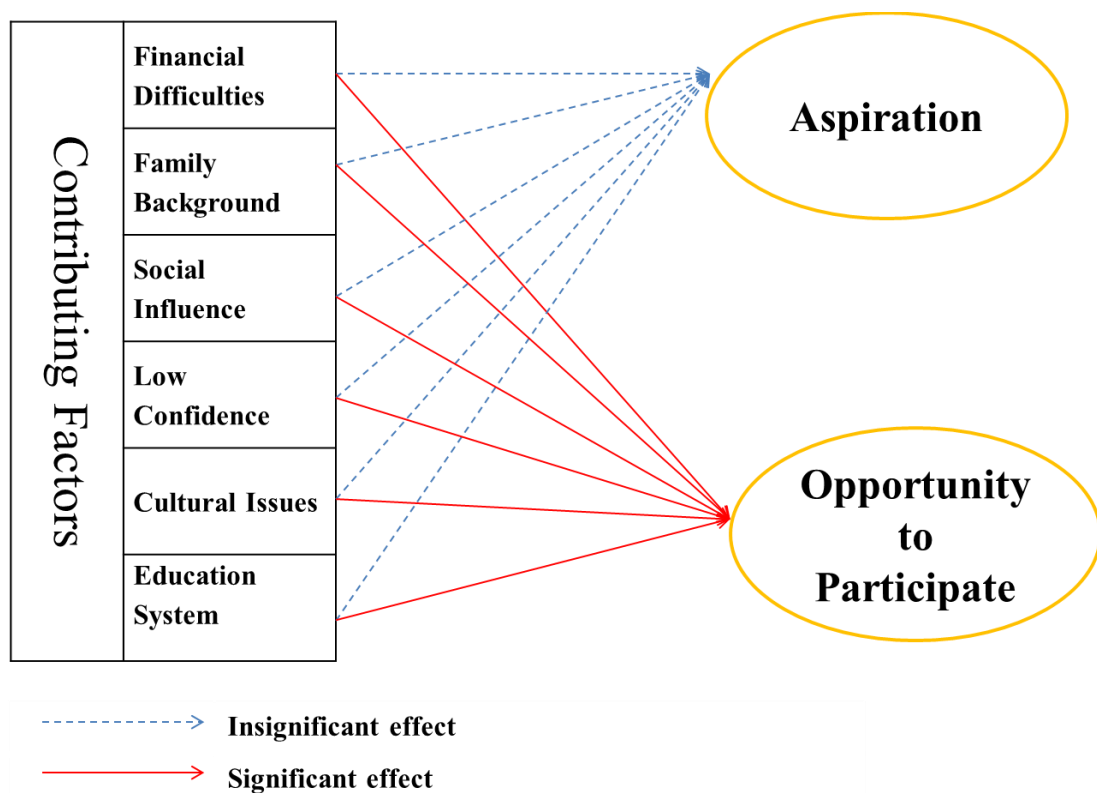


Figure 6.1 Conceptual Model Indicating Impacts of Contributing Factors on Barriers

Aspirations of VET-LSEG students

Tamuri et al. (2005) and Abdullah et al. (2013) have suggested that students with low aspirations for HE generally show little desire to pursue HE, and usually decide not to progress with their studies. The study reported here indicated that VET-LSEG students in Malaysia generally had high aspirations for HE, due to their awareness of both the importance and benefits of HE. Students generally believed that HE could not only result in a better career and higher income, but also better social standing and even family honour.

The receptiveness of VET-LSEG students towards HE may signify a change in the general perception among Malaysians towards HE. HE, therefore, was not just considered as further study, but also as a route to higher success and a better future. The obvious awareness and receptiveness of VET-LSEG students towards HE may indicate that government policies and strategies that promote HE and encourage participation are

being effective. Government efforts in providing nationwide education campaigns, regular education exhibitions and school counselling seemed to have resulted in increased awareness and higher aspirations for HE amongst VET-LSEG students.

Aspiration and barriers

VET-LSEG students showed both high aspirations for HE and the strong desire and determination to pursue HE. This strong desire was demonstrated in their extra efforts to attain good results in their VET studies in order to meet HE entry requirements, and in their detailed forward planning in order to gain advice and guidance that can help their application and admission to HE studies. Their high aspirations to continue to HE were not significantly affected by the six major contributing factors to barriers to HE identified in this study. Students maintained their strong aspirations for HE despite acknowledging the presence of these barriers and expressing their concerns about the difficulties posed by the contributing factors.

Some students' aspirations appeared to be enhanced by their experience of having come from a disadvantaged family background as a result of their parents' limited education and career achievements. These students were found to have been inspired by their parents' hardships, and motivated to work towards gaining HE qualifications in order to achieve a more successful career and make the family proud. This finding suggests that these VET-LSEG students have the mental maturity to assess their situation independently of their parents' past experience and achievements, and make suitable life decision. Their strong determination to pursue HE is consistent with research undertaken by Bowden and Doughney (2010), and Sulaiman et al. (2012), who claimed that students' educational aspiration were not easily affected by their parents' education or professional achievements.

Aspiration and delaying enrolment in HE

Though VET-LSEG students were found to have strong aspirations for HE, they also maintained high aspirations to gain employment. Thus, students who expressed a strong interest in pursuing HE, also displayed a strong interest in gaining employment

after completing their VET studies. Students spent their time, therefore, planning for both HE and employment at the same time. The students' strong aspiration towards gaining employment was influenced by several things, but mainly due to their financially disadvantaged background which required them to work in order to support the family. Finding employment upon graduation meant that not only could VET-LSEG students bring home money for the family, but it also enabled the family to save for the future potential expenses of further education. These equally high aspirations towards both HE and employment indicated that of VET-LSEG students were still indecisive and would choose the route that is most easily attained, and that provides them with the best perceived benefits.

Students who showed the tendency to choose employment after completing their VET programmes over and above further study had usually also made plans to return to HE after commencing work. Thus, instead of giving up their aspirations for HE, these students delayed their pursuit of HE, in most cases, due to their financially disadvantaged background. Most students planned to either work and study part time, or work first and study later. Students believed that the work allowed them to not only earn an income to improve their existing financial status, but also to save money so that they can use their savings for education at a later stage.

The students' decision to work after completing their VET programme does not, therefore, represent a lack of aspiration for HE, in fact many students were found trying to find ways to return to school even after starting work. Thus, the aspirations and educational needs of these students who chose to work after completing their VET studies, should not be dismissed. This study indicated that it was likely that these students would return to school to continue their studies in HE at a later stage, especially when the opportunity presented itself, or when the students' financial condition improved. In view of these findings, suitable policies and strategies must be put in place to not only motivate these students, but also to reengage them with study and provide them with a relevant route and necessary assistance to return to HE.

The high aspirations of VET-LSEG students, resulting from their understanding of the benefits and relevance of HE, is encouraging. However, the fact that students would

give up educational opportunities for employment due to their financially adverse situation is alarming. This demands closer examination in order to ensure these students are not deprived of their educational opportunities, and are provided with suitable assistance and guidance to either plan for or work towards attaining HE if that is their goal.

Opportunity to participate

In view of the fact that the VET-LSEG students are underrepresented in HE, the high aspirations found among these students prompted the need to investigate the students' actual opportunity to participate in HE. The data showed that the students' opportunity to participate was more susceptible to the negative effects of the barriers to HE, when compared with their aspirations. The effects of each of the six contributing factors on the students' opportunity to participate are presented below.

Financial difficulties (FD)

Financial Difficulties (FD) was found to be one of the most critical factors causing barriers to VET-LSEG students participation in HE. VET-LSEG students encountered FD due to their lack of household incomes and household savings which subsequently resulted in their inability to afford HE expenses. In this regard, not only were the students unable to afford the direct costs of HE studies, such as school fees, but they were also unable to afford the opportunity costs that were incurred, such as reduced income to the family household.

Direct costs

The tuition fee is the major direct cost incurred by VET-LSEG students continuing onto HE studies. The tuition fees charged by HE institutions in Malaysia are not only expensive but also unaffordable for most VET-LSEG students, especially those from poorer households (Brinded, 2015). The students' inability to afford the tuition fees was found to not only cost the students the opportunity to participate in HE, but it also forced many aspiring students to either delay studying or to give up the pursuit of HE altogether

after completing their VET programmes. The students in this category were found either to be working in the job market or unemployed due to not being able to get a job.

In addition to the tuition fees, some VET-LSEG students were also daunted by the accommodation and travel expenses that would be incurred during the course of study. These expenses are especially critical to students from rural areas that are required to leave home to study in a HE institution located in different town or state. Students in this category were unable to afford either the traveling costs or the accommodation fees required if relocation is required. The extra expenses were found to not only contribute a significant financial burden to VET-LSEG families, but also created more reluctance or inability of parents to send their children to HE institutions.

Students from the poorer households also struggled to afford the trivial expenses such as application fees or registration fees. The data highlighted cases where previous VET-LSEG students lost the opportunity to participate in HE due to the family's inability to afford the transportation expenses, either to send the respective students to register with the designated institutions, or to send the students to the designated agencies to collect or purchase the application forms for HE. The study also found cases where VET-LSEG students gave up HE even after getting admission approval, due to not being able to afford to travel to the institution located in a different state.

Opportunity costs

The participation of VET-LSEG students is also impacted by the opportunity costs incurred due to their decision to participate in HE. As previously identified by James et al. (2008) and Sebates et al. (2010), the most significant opportunity cost identified in this study was the potential loss of work salary from possible job opportunities. VET-LSEG students were willing to delay or give up the opportunity to participate in HE due to their fear of missing out on an employment opportunity. The effect of the opportunity cost was evident in the students' equally high aspiration to study HE and to obtain employment. In this regard, not only were students hesitant about participating in HE after completing their VET studies, they were also likely to give up opportunity to study

HE when an employment opportunity presented itself, even if the available job offer came with low salary and little career prospect.

These findings confirm previous findings that FD is a significant factor impeding VET-LSEG students from participating in HE (Poo et al., 2012) . The Malaysian government is aware of the barriers caused by FD on students' participation, and have provided financial assistance over the years to help students pursue HE studies (Tham, 2010). Despite the government's claims (Economic Planning Unit, 2010c; Ministry of Education, 2014b; Performance Management and Delivery Unit, 2013) and the literature suggesting that the FD experienced by Malaysian students could be overcome with the widely available financial assistance offered by the government and other relevant agencies in Malaysia (Tham, 2010; Zainal et al., 2009), this study found that such assistance was not only ineffective but was also not easily accessible by the VET-LSEG students. VET-LSEG students were found to have problems accessing both the scholarships and the education loans on offer.

The ineffectiveness and/or inaccessibility of the scholarships can be explained by both an inherent bias in the awarding system against VET-LSEG students and the use of success criteria that favour students with academic achievements and based on academic merit. Most, if not all scholarships require applicants to present proof of academic achievement and academic certification such as a Certificate of Malaysian National Examination SPM and STPM, or their equivalent (StudyMalaysia.com, 2015). It is difficult, therefore, for skills-focused VET-LSEG students to even apply for the scholarship funding, as usually only students from the mainstream education system meet these requirements and get awarded the scholarships.

Comparatively, education loans are more accessible to the VET-LSEG students in Malaysia than scholarships. The education loans provided by Malaysian government, especially the PTPTN loan, are more accessible due to the less stringent application requirements. The PTPTN loan is available to all Malaysian citizens under 45 years old and applicants receive approval of their loan if they have evidence of being approved for admission to study a HE programme in Malaysia (Performance Management and Delivery Unit, 2013). Despite the greater accessibility of these loans, however, this

study found the education loans were ineffective in assisting VET-LSEG students to overcome FD.

One of the reasons for the ineffectiveness of education loans is the fact that most of them only cover tuition fees and do not contribute to the cost of living expenses. This study found that living expenses caused an equally heavy burden for VET-LSEG students, especially for those who required accommodation near the HE institution. Very often, the cost of living expenses were not only unaffordable for VET-LSEG students, but they were also the reason why these students gave up the opportunity to participate in HE despite having been offered an education loan. In addition, the PTPTN loan does not cover the full amount of tuition fees, with the outstanding amount remaining ranging from 10% to 40% of the tuition fees. The fact that VET-LSEG students from the poorer households are unable to afford the remaining fees has been identified in this study as a significant factor in students' unwillingness to participate in HE.

As has been identified elsewhere (Forsyth & Furlong, 2003), this study identified that the ineffectiveness of education loans is also due to the VET-LSEG students' reluctance to incur debts. Such reluctance was found to be due to their fear of not being able to repay the debt in the future, especially if they failed to get employment after graduation. The inability to repay a loan was viewed as a burden, not only by the student but also by their parents and other family members. As a result, many previous VET-LSEG students, especially those from poorer households, gave up the opportunity to participate in HE despite being offered an education loan, while some expressed reluctance to even submit the loan application.

Family background

The family background of VET-LSEG students, though significant, was found to be a less critical factor when compared with FD. The influence of the family background was assessed based on the effect of the parents' educational and career achievements. The study found that though parents with less successful educational and career backgrounds had little effect on VET-LSEG students' aspirations for HE, they were significant in terms of students' opportunity to participate in HE. Parents with no HE

experience and low career achievements were less capable of providing useful guidance to the VET-LSEG students, especially in terms of finding suitable programmes and institutions. Without parental guidance, VET-LSEG students faced greater challenges in finding suitable information about HE studies.

Students with little guidance from parents were found to be more easily distracted from pursuing HE studies. Such VET-LSEG students showed a greater tendency to choose to work when the opportunity presented itself, than those who were guided more closely about HE by their parents. The parents with no HE experience and low career achievement were also found to be less likely to provide their children with access to relevant information about HE opportunities and financial assistance.

Low confidence

VET-LSEG students were generally found to have little confidence in the knowledge and skills they had acquired through the VET programmes they studied, or the certification they obtained. In terms of their knowledge and skills, the students believed that their VET programmes only equipped them with basic knowledge and skills which was not sufficient to prepare them to cope with HE studies. In terms of certification, the students were not confident that their VET certification would qualify them for studies in HE institutions in Malaysia.

VET-LSEG students also expressed concern about their lack of academic training and achievement in their prior primary and secondary schools. Students believed their previous education did not equip them with the necessary learning for HE studies or even enable them to receive an admission offer to study with local HE institutions in Malaysia. Despite this lack of confidence, however, the VET-LSEH students still expressed a strong interest in pursuing HE.

While this lack of confidence did not eliminate their aspirations, VET-LSEG students expressed significant concerns about pursuing HE. Students wanted to study but also worried that they might be wasting their time, due to their inability to cope with the studies and complete them successfully. Thus their lack of confidence daunted their aspirations and desire for HE. This finding is consistent with James (2008) who

suggested that students' desire to study could be significantly affected by their low confidence, caused by weak academic performance in previous learning and disadvantaged learning backgrounds.

These findings highlight the barriers caused by the lack of alignment between the VET and HE systems in Malaysia, especially in terms of programme structure, learning outcomes and entry requirements. These gaps have not only daunted the students' aspirations for HE but could also cause them difficulties in either gaining admission to study HE programmes or coping with their HE studies and completing them successfully. Students' concerns and lack of confidence also highlighted the importance of channelling accurate and up-to-date information about HE to VET-LSEG students, especially with regards to available opportunities and financial assistance.

Social influence

The Social Influence (SI) was investigated in regards the effect of VET-LSEG students' peers and other social acquaintances, such as schoolmates and neighbours. Overall, the results showed that students' aspirations for HE were not significantly discouraged by social influence, rather, were significantly motivated by social encouragements. The findings in this study showed that VET-LSEG students who had peers with aspirations for HE encouraged each other to attain entry into HE, and those who did not have such aspiration were found to be supportive, rather than discouraging with their friends' decision to participate in HE.

This result confirms the findings of Schindler and Reimer (2011) who also found that the students' aspiration was not significantly impacted by peers due to the fact that they had similar perceptions about HE. The minor negative influence of peers could be due to the increasing public awareness of the benefits of HE and the public's increasingly receptive attitudes towards HE. In Malaysia, HE is no longer considered a luxury, and especially among VET students and people from the lower socio economic groups, it is considered to be another educational route that can lead to better job opportunities and greater success.

Culture

The effect of culture on the aspirations of VET-LSEG students was investigated in terms of the students' appreciation of HE. The findings revealed that VET-LSEG students, even those who decided to seek employment after completing their VET studies, generally understood the importance of HE and appreciated the benefits that come with HE qualifications. These positive perceptions not only resulted in their having strong aspirations for HE but also drove these aspirational VET-LSEG students to expend extra effort on their VET studies in order to score results that could qualify them for HE. This finding is in contrast to earlier studies (Shariffuddin et al., 2014; Tamuri et al., 2005) that found that students from LSEG backgrounds usually adopt a culture that does not appreciate or value HE. The appreciation and valuing of HE by VET-LSEG students may be an indicator of the effectiveness of government policies and strategies in promoting education and encouraging participation. This positive attitude towards HE also suggests a change of cultural perception and values towards HE among the VET-LSEG students in Malaysia.

Education system

The education system in Malaysia was found to be the most critical factor contributing to the barriers to HE encountered by the VET-LSEG students. This study found that VET-LSEG students were not provided with the necessary pathways to progress to HE and this lack of progression pathways was rooted in an education system which does not favour students with VET backgrounds, a finding that concurs with a report from the World Bank (2012). VET-LSEG students had difficulty in finding suitable HE programmes for progression as most programmes offered by the HE institutions, including universities and university-colleges, were found to be irrelevant to their needs, or not suitable for developing their existing knowledge and skills further.

The HE institutions in Malaysia grant admission approval based upon academic merit which favours applicants who had progressed through the mainstream education system with outstanding academic achievements, especially in SPM and STPM. The HE

institutions' strong preference for admitting academic focused students was found to be the major reason for applications from VET-LSEG students being sidelined or rejected.

Even in cases where suitable programmes were available and admission was granted to the VET-LSEG students, the conditions of offer were also found to be less favourable than those granted to the academic focused students. For example, the admission offer to VET-LSEG students may include extra conditions that required them to study for an extra semester, normally known as a bridging programme. These conditions usually incur extra tuition fees and lengthen the duration of the programmes which make the progression offer less attractive to VET-LSEG students, especially those who wish or are expected to commence work as early as can be achieved. Such extra conditions were found to contribute to VET-LSEG students' decision to give up the opportunity to participate in HE.

Factors causing the lack of progression pathways

This study revealed four major issues (Figure 4.1) that contributed to the lack of progression pathways for VET-LSEG students in Malaysia: differences between VET and HE systems, lack of collaboration between VET and HE, lack of recognition for VET qualifications, and unhelpful governmental policies and strategies. Each issue was found to cause a significant barrier to the participation of VET-LSEG students in HE in Malaysia and are discussed individually below.

Difference between VET and HE system

As discussed in Chapters 2 and 4, the Malaysian government has delegated the mission to the VET system to produce a skilled workforce, while the HE system which has been entrusted to provide academic education and promote intellectual growth. The different missions of the two systems have resulted in different organisational objectives and operating procedures, creating a gap between the two systems which has prohibited students' mobility, especially the upward mobility of VET students to the system. Thus, VET-LSEG graduates have been unable to progress to HE studies due to the differences between the two systems, a finding in agreement with Buchanan et al. (2009) and

Suradin et al. (2010). This study revealed that the VET-LSEG students' mobility problems were related to both difficulties in finding suitable programmes, and in achieving approval to study in HE programmes offered by the HE institutions.

Four major mismatches between the Malaysian VET and HE systems were identified in this study that defined the gap between the two systems; a mismatch in education and training, admission requirements, teaching and learning practices and assessment practices. Such mismatches were found to be associated with the VET-LSEG students' difficulties in both finding suitable programmes and in gaining admission into HE institutions. Each mismatch affected the VET-LSEG students' opportunity to participate in HE differently, and the effects of each are presented separately as follows.

Mismatching education and training

The different mission and objectives of VET and HE institutions have resulted in very different education training programmes, a finding also highlighted by Mustapha (2002) and Tham (2010). VET institutions offer job-based training programmes that take a narrower and task-specific approach to their learning outcomes, while HE institutions offer more academic, theoretical-based programmes in order to build knowledge and intellectual development. This study found that the narrow, structured VET programmes were either associated with just a small portion in the bachelor degree offered at the Malaysian universities in a related field (e.g. VET's Diploma in Takaful Insurance and the Bachelor of Risk Management and Insurance) or they did not have an aligned programme offered as a HE programme at all (e.g. Diploma in Furniture Making (Diploma Pembuat Perabot)). Both situations result in significant difficulties for VET-LSEG students wishing to progress into HE studies.

In the case where relevant HE programmes are not offered in any HE institutions in Malaysia, VET-LSEG students can only further their studies if they convert to a different field of study, which could be totally different from the field that they were trained in during their VET studies. The findings in this study show that, however, it is rare for students to be admitted to HE studies under such circumstance, and the institutions that are willing to admit VET-LSEG students into different fields of study are usually the private HE institutions that charge expensive tuition fees which are

unaffordable to the VET-LSEG students. Where there is a HE programme that is related to their more narrowly focussed VET programmes, VET-LSEG students found great difficulty in identifying and matching the relevant HE programmes, as most of these programmes have a broader and unfamiliar title (e.g. Diploma in Catering and the Bachelor of Culinary Arts and Food Service Management). The findings suggest, therefore, that students might still miss the chance to apply for participation even when suitable HE programmes are available.

Mismatching admission requirements

The entry requirements imposed by Malaysian HE institutions emphasise the applicant's prior academic achievements (Ministry of Education, 2014; Pang, 2010). In fact the formal and essential entry requirements that are imposed upon all Malaysian HE institutions by the MQA, demand that students present proof of SPM for Diploma level programmes and STPM for Bachelor level degree programmes, or their equivalent. The result of this requirement is that most established HE institutions, especially publicly funded institutions, only consider and admit students based on academic merit, with particular priority given to the SPM and STPM. This emphasis on academic merit in the entry requirements of HE institutions does not match the educational background of VET-LSEG students, as skills certifications are not listed as part of the MQA-imposed entry requirements. A background in skills-focused VET studies, therefore, has equipped students with a qualification that does not match the preferences of HE.

In addition, the fact that most students were transferred to VET studies in lower secondary level-three (equivalent to Grade 9 in the Australian school system), with many of them transferred due to their weak performance in academic studies, further undermines the students' capacity to meet the entry requirements of HE institutions. As a result, the HE admission system both discourages and prevents VET students from submitting their applications for admission and will likely reject applications due to the students' VET backgrounds.

Mismatching teaching and learning practices

The study has revealed that the approach of the VET institutions which focused on developing job-ready graduates through the emphasis on skills, has resulted in VET

programmes which include a high concentration of practical training and minimal focus on theoretical teaching. While the VET institutions have abided with the government-imposed MQA guidelines that require curricula to be structured with combination of theoretical and practical elements, the VET programmes contain at least 70% of the practical element and less than 30% theoretical elements. Such structures differ significantly from most HE programmes that tend to include less than 30% practical elements and at least 70% theoretical elements (Kandar, 2014). This discrepancy in programme structuring was found to have negative repercussions for the progression of VET-LSEG students to HE study.

VET programmes were found to be perceived as less compatible with academic studies in traditional schools, and less capable in preparing VET-LSEG students with the necessary knowledge and skills for HE. This study also found that the VET-LSEG students were perceived as less equipped and less capable of coping with the academically intensive HE studies due to the lack of theory in their VET studies. These findings have been echoed in many previous studies such as Ambrose et al. (2013) and Buchanan et al. (2009). These negative perceptions of VET learning outcomes has contributed to both a reluctance of HE institutions to admit VET-LSEG graduates, and a lack of confidence on the part of VET-LSEG students to apply for admission for HE studies.

The practical emphasis of VET programmes was perceived as having created VET-LSEG graduates with better capability in practical learning than in theoretical learning. VET-LSEG students also showed greater enthusiasm for practical training, especially the On-Job-Training (OJT), which enabled them to experience real work situations, but they displayed less interest in, and sometimes even fear of, theoretical learning. While the students' strong interest in practical learning was associated with their positive performance in VET studies, their lack of interest in the theoretical was associated with their lack of success in, and less positive experience of, academic studies during their early school years, especially the primary and lower secondary school studies.

Though the lack of interest in theoretical learning was not found to discourage students' desire to participate in HE, it did reduce their opportunity to participate in HE. VET-LSEG students were labelled as very weak in theoretical learning, especially by the HE institutions. This negative image has resulted in VET-LSEG students being seen as less desirable and less capable candidates for the academically-intensive HE studies. Such perception was found to cause a reluctance of HE institutions to admit VET students even when suitable programmes were available. Thus, as previously noted by James (2008) and Buchanan et al. (2009), the lack of academic achievement and theoretical teaching was found to be a negative factor affecting VET students' opportunity to participate in HE.

If VET-LSEG students had a good experience of practical learning during their VET studies, this was found to improve their interest and also confidence in subsequent studying and learning. Findings of this study revealed that VET-LSEG students enjoyed their success in VET studies and also wanted to continue to experience that success in the higher level studies. While this positive attitude indicated the potential for success of VET-LSEG students who aspired to HE studies, it also highlighted their learning limitations. Such potential and limitations must be taken into consideration when developing progression pathways suitable for VET-LSEG students, especially in restructuring the existing HE programmes or designing new VET-relevant HE programmes.

Mismatching assessment practices

This study showed that the job-focus and skills-emphasis of VET institutions has driven a pragmatic approach to the construction of VET programmes, their pedagogies, and the assessment strategies they use. VET institutions value students' skills competency more so than their knowledge development. They were also found to place more weight on practical tests, such as lab-work or OJT, than on the written examinations or written assignments. This pragmatic approach contradicts the academically-intensive approach adopted by most HE institutions in Malaysia. By contrast, the HE institutions were found to have adopted traditional academic approaches to their assessment design, emphasising the testing of students' knowledge

acquisition and intellectual development. The HE institutions were also found to place more weight on written assessments and examinations, than on practical assessment such a field tasks or on-site projects.

The discrepancy in assessment structure resulted in two major repercussions for VET-LSEG students' opportunity to participate in HE. Firstly, the VET-LSEG students who were used to assessment practices emphasising the practical, were viewed as less equipped with the necessary knowledge and skills in handling assessments in HE, which require strong academic and analytical skills. Secondly, VET-LSEG students who were used to competency tests were viewed to have less confidence and to be less capable of handling the assessment tasks in HE which are perceived to be more difficult and complicated. These negative perceptions resulted in the labelling of VET-LSEG students as less desirable candidates for admission to HE studies, thereby, contributing to the reluctance of HE institutions to admit these students to HE studies.

While the different educational systems favoured different assessment practices, the grading system used by the VET institutions, especially the vocational colleges, were found to be similar to the system used by the HE institutions. Instead of assessing the students with a non-graded, competent/not competent system, as suggested in Ambrose et al. (2013), the VET institutions were found to grade the students' practical tests and theoretical examinations using a Grade Point Average (GPA) system. Each student was given a final Cumulative Grade Point Average (CGPA) as a record of their final achievement in their VET programme.

The study found that the similar grading system was being implemented to synchronise the assessment systems between the VET and HE systems, in order to promote collaboration and student mobility between the two systems. The similar grading system were designed to make the assessment of students' applications easier during the admission process. However, the findings suggested that the idea of synchronising both systems using a similar grading system was less convincing to the HE institutions. These institutions appeared to be more concerned about the repercussions for the students of the different programmes and assessment structures, rather than what could be achieved by a unified grading system. Thus, at the time of

writing, it was too early to consider the usefulness of a synchronised grading system in enabling student progression.

In summary, it is reasonable to conclude that the opportunities for further study for VET-LSEG students in Malaysia is significantly and negatively affected by the differences between the VET and HE systems. These differences were found to produce a gap which decreased students' mobility between the two systems, especially the upward progression of VET graduates to the HE system. The biggest hindrance resulting from the differences between the VET and HE systems was found to be the reluctance of HE institutions to offer suitable progression pathways and to admit VET-LSEG students to HE studies. The situation is exacerbated by the fact that all HE programmes are offered through the HE system and not the VET system, which leaves the VET-LSEG graduates no choice but to keep applying to the HE institutions even though these institutions are reluctant to admit them.

Lack of collaboration between VET and HE systems

The study has highlighted a lack of collaboration between the VET and HE systems as a contributing factor to VET-LSEG students' difficulties in participating in HE. The findings show that this lack of collaboration has not only impeded the development of relevant pathways that are suitable for the progression of VET-LSEG students, but has also inhibited the flow of useful and relevant information between the two systems. Information flow, about both the progression pathways that are available and suitable for VET-LSEG students and the capabilities required of these students in HE, is impeded.

Thus, collaboration aimed at developing suitable progression pathways, either within the HE or VET system, to enhance students' opportunities for admission to HE studies, and ensure suitable HE programmes are designed and offered in both institutions, would help minimise the gap. In this regard, relevant strategies have already been implemented within the VET system, specifically, the MOU strategy implemented through government's Transformation Programme.

Under the MOU strategy, VET institutions were instructed to establish Memoranda of Understanding (MOU) with HE institutions in Malaysia, with the purpose of developing progression pathways and enabling VET-LSEG students to progress to these partnering HE institutions for further studies. Despite the possible benefits of such collaboration for the improvement of students' progression, no apparent or significant collaborations that are relevant to generating progression pathways to VET-LSEG students have yet been established. Even the MOU strategy, initiated by the VET system, has attracted little interest or response from the HE institutions.

The lack of collaboration was found to be mainly due to the reluctance of HE to collaborate with the VET institutions, evidenced by both their lack of effort in approaching the VET institutions and their lack of response to the MOU initiated by VET institutions. The study found that HE institutions saw little benefit for themselves from a collaboration with VET institutions. In addition, the HE institutions regarded the VET system as a separate entity, operating with mismatching objectives and operating standards. Both perceptions contributed to a lack of interest or reluctance on the part of HE institutions to establish collaborations with VET institutions.

There was also little evidence of the government either encouraging or enforcing of collaboration between the institutions, particularly in regards requiring anything of the HE institutions. The government's lack of proactivity is evidenced by the MOU strategy itself which was mandated within VET system, for the purpose of encouraging them to proactively establish collaborations with HE institutions. No such equivalent government directive was made to the HE institutions to motivate them to take up the MOUs initiated by VET institutions. While the lack of success of the MOU strategy highlights the importance of government intervention in enforcing change, the lack of government directives points to the government's fear of changing the existing structure of the HE system.

The government's intention of maintaining the existing operations and structure of its HE institutions is evidenced in the new Malaysian Technical University Network (MTUN) strategy, implemented in conjunction with the rollout of new vocational colleges and vocational diploma programmes in 2013. Under the MTUN, a group of

existing local HE institutions were nominated to form an alliance to work together with the VET system to design and offer VET-related HE programmes, that are suitable for the progression of VET-LSEG and other skills students in Malaysia. With the creation of MTUN universities, most of the existing HE institutions, especially those reluctant to collaborate and offer progression pathways for skills students, are left alone. It is worth noting, however, that though the MTUN has a specific mission to develop and offer VET-related HE programmes, this does not prevent other institutions in Malaysia from developing and offering similar programmes, as long as they fulfil the government imposed MQA's requirements.

The study highlighted at least four benefits for VET-LSEG students in terms of greater opportunity to participate in HE, through the establishment of the MTUN. Firstly, better assurance of student progression, as the MTUN was established especially for the progression of VET students. Thus the opportunity for students to find suitable programmes and suitable pathways is greater when compared with conventional universities who favour students with academic backgrounds. Secondly, as VET students are the main source of students for the programmes offered through the MTUN, there should be more opportunities for VET students to gain admittance into higher degree programmes. Thirdly, as VET-LSEG students will only compete for places with other VET students from similar skills background, the process should be fairer and contain no bias towards academic merit. Finally, and perhaps most importantly, VET-LSEG students could progress to study higher level programmes relevant to their field of studies, as MTUN universities are expected to collaborate with VET institutions in designing and offering relevant programmes.

Thus, the MTUN strategy has been implemented not only to address the barriers encountered by VET-LSEG students, but also to reduce the need for most existing HE institutions to change their operations in order to offer progression pathways to skills or VET students. The findings suggest that MTUN is the government's solution for the progression of VET-LSEG and other skills students in the near future, especially in ensuring progression pathways and admission opportunities. While celebrating the potential benefits that can be delivered by the MTUN strategy and waiting for its success

to unfold, the study has identified three major concerns that might affect the execution of MTUN strategy and more importantly, the future development of VET-LSEG students. These concerns include: the ambiguity in the identity of the MTUN, MTUN capacity to design and offer suitable programmes, and its ability to cope with large student numbers.

Ambiguity in the identity of the MTUN

Though the implementation of MTUN will help to maintain the current structure and responsibility of both the VET and HE systems, the role of MTUN has created ambiguity in the identity and position of the institutions involved, as well as the programmes they offer. With its distinctive role in offering VET programmes at the HE level, it is uncertain whether MTUN institutions should be regarded as part of the country's VET system or HE system. This raises questions about how both systems will be able to remain distinct and differentiated from each other within the MTUN structure, through the type of programmes and the education they offer.

Determining the identity and position of MTUN is important as it determines the perceptions about, and recognition provided to, the programmes offered through the network. Being regarded as part of the HE system assists with the accreditation of the MTUN programmes, and maintains their equivalence to other HE programmes offered through the conventional institutions. Being regarded as part of the VET system, however, might result in MTUN programmes being regarded as less rigorous as they become grouped with the current VET programmes, albeit being offered at higher level. If the MTUN programmes are perceived as less accredited, it is questionable how VET-LSEG students will benefit from studying with them, especially in terms of getting better employment or enhancing their career prospects.

MTUN capacity to design and offer suitable programmes

Secondly, uncertainty remains in relation to the MTUN institutions' capacity to design and offer HE programmes suitable to the progression of VET-LSEG students. According to the representatives from the Malaysian Ministry of Education, despite the institutions' accumulated experience as academically focused HE institutions, designing VET-related HE programmes is a relatively new concept for them, as they have no prior experience of offering VET programmes. These programmes are usually highly

specialised with certain requirements unique to specific jobs, thus designing programmes requires not only general knowledge in designing education courses, but also specialised knowledge and insights about the job and industry related to the programme.

Designing a higher level automotive technology programme, for example, requires course designers to have general knowledge about writing HE programmes as well as specialised knowledge about the automotive industry and the jobs automotive technologists are required to undertake, in order to match the needs of industry and ensure the employment of graduates. In view of MTUN institutions' lack of prior experience in working with VET teachers and industry, it is questionable if the institutions possess the expertise required to design and offer VET programmes relevant to the standards and needs of students and the related industries.

MTUN's ability to cope with large student numbers

Thirdly, it is worth noting that the MTUN, which consists of only five institutions, is expected to accommodate students graduating from at least seventy-eight publicly funded vocational colleges in the country, not including hundreds of other VET institutions that are also producing graduates for the VET related HE programmes. In view of the huge number of students, potentially 30 students graduating per programme per VET institution, it is questionable whether the number of aspiring students could be accommodated by only five MTUN institutions. To add to the complexity, there are at least sixty formal VET programmes offered through the existing VET system (Ministry of Education, 2012f), ranging from engineering technology to fashion design and office administration. It is questionable, therefore, how many pathway programmes can be offered through the five MTUN institutions, especially in view of the institutions' limited resources, capacity and expertise. Finally, VET programmes require lecturers and/or trainers with theoretical knowledge and practical skills and competencies relevant to the specific fields of study. As VET related HE programmes are new to the education system in Malaysia, it is doubtful whether a suitable teaching force is yet available, either in the MTUN institutions or within the country, to implement the newly designed higher level VET programmes.

These concerns have inevitably raised concern about the capacity and sustainability of the MTUN in fulfilling its mission and in serving the progression needs of the VET-LSEG students and other students from skills background. Most importantly, this study questions the government's decision not to require other established, conventional and traditional institutions to collaborate with the VET institutions. This is particularly pertinent given the valuable expertise and experience that these institutions could contribute to the development of progression pathways that meet both the stringent requirements and standards of HE and the needs of VET-LSEG or other skills students in Malaysia. It also presents a missed opportunity to enhance the value of these new HE programmes through the involvement of these established institutions that are generally perceived as the benchmark for HE in Malaysia.

Lack of recognition for VET

This study found that the job-specific and skills-focused characteristics of VET makes it appear a less prestigious study option, a perception that is exacerbated by the fact that VET is also used to accommodate and retrain students with problematic behaviour or weak academic performance. Not only has the VET image become tainted, it has become even more incompatible with the academically intensive education offered through the traditional education system. To make the situation worse, this inferior image of VET study carries through to the VET certifications and onto the students studying and graduating through VET institutions. As a result, not only is VET study and VET certifications perceived as less prestigious and sub-standard, VET students are also perceived as second rate as compared with the students studying and graduating through the traditional education system.

The less prestigious image was found to have a negative impact on VET-LSEG students' opportunity to participate in HE. Not only were VET-LSEG students perceived as less capable, due to their skills rather than academic-focused studies, but they were also perceived as less enthusiastic about academic studies, due to their lack of success in this area during their prior learning. These negative perceptions resulted in the VET-LSEG students being seen as less desirable candidates for admission to HE studies,

especially by the established HE institutions that admit students based primarily on academic merit. This study revealed that the Malaysian government acknowledges the less prestigious and inferior image of existing VET institutions and graduates, resulting in their implementation of various strategies aimed at improving the image of VET programmes and certification in Malaysia. Other than the significant MTUN strategy, the government also supports promotional activities and the use of advertising circulars to create awareness and improve the image about VET.

Via the MTUN strategy, the assurance of progression pathways will help to improve the image of VET as it will no longer be viewed as a 'low level only' and 'dead-end route'. The fact that the MTUN consists of five public funded universities who will be offering progression pathways also helps to add value to VET and VET certifications, as public funded universities are usually regarded as the benchmark for HE institutions in Malaysia. The promotional activities and advertising materials about VET were also found to be effective in increasing the awareness of Malaysians about VET, as it is evidenced by the increasing enrolments in VET programmes recorded in the government's statistics and education annual reports (Buletin Anjakan, 2015; Department of Skills Development, 2011a).

A further government strategy is the establishment of relevant professional accreditation bodies or accreditation boards, such as 'Malaysian Board of Technology' (MBOT), in order to grant professional recognition to the programmes and qualifications offered through the VET system. The study found that the image of VET and recognition of its certifications were expected to improve with the accreditation granted formally by the MBOT. The accredited certificates are also expected to improve the opportunities for VET and VET-LSEG students to either continue onto HE or to secure employment.

Concerns remain, however, about the effectiveness of the strategies discussed previously, in regards their ability to improve the image of VET and the reputation of VET graduates. Firstly, as has been identified earlier, being a secluded group of institutions offering newly designed VET-related HE programmes, could position MTUN as part of the VET system. With its VET-related identity, it is questionable how

much extra credibility the MTUN could add to the current VET system or its students, despite offering higher level education in the VET circle.

Secondly, being part of the education structure in Malaysia, VET is already an accredited education by the MOE, which is considered the highest academic authority in Malaysia. With the MOE recognition, it is questionable how much extra credibility the newly established professional accreditation bodies like MBOD, provide to the programmes and qualifications offered through the VET or MTUN system. This is especially pertinent as these newly established accreditation bodies have yet to establish their own creditability in the respective professional circles and industries. Thus, further exploration will be required to evaluate the effectiveness of these implemented strategies in improving the image of VET study or valuing VET graduates and certifications.

Unhelpful governmental policies and strategies

While the government has implemented various policies and strategies to encourage students' participation in HE, this study revealed that most of these policies only benefitted students from academic backgrounds, not the students from VET backgrounds. The policies and strategies implemented in the VET and HE systems were found not only to be less helpful for the progression of VET-LSEG students, but in some cases even caused barriers to the participation of VET-LSEG students in HE. Amongst them all, the policy that was found to have caused the biggest barrier to the participation of VET-LSEG students in HE, was the policy that requires VET institutions to act as a training channel to produce workforce to the industries.

The workforce production policy resulted in VET institutions focusing their efforts on preparing students for work instead of preparing them for further study. The VET institutions' efforts in this regards are evidenced by both the structure of VET curricula, that focus on jobs and skills development, and the VET teaching practices, which emphasise practical and work-related training. Under the workforce production policy, the VET-LSEG students were found to both miss out on learning and experiences that could prepare them for HE, and to be more strongly encouraged to pursue potential employment opportunities than participation in HE.

The students' learning experience in VET courses focusses on their development of job-ready skills, and provides them with greater exposure to the employment market than to the development of the academic skills required in HE. The VET programme structures emphasise real-work training, especially through the inclusion of the OJT as a compulsory unit, and provide students with the opportunity to both experience working in a real world environment, and get exposure to potential employers that would offer them work immediately after they complete their VET studies. The findings suggest that the OJT is an effective channel to 'push' students into the job market immediately after completing their VET programmes. This study revealed that many previous VET-LSEG students receive a job offer during the OJT and that these job offers require these students to start working immediately after completing their VET studies.

The study also found that VET-LSEG students were offered career counselling and recruitment sessions, that provided them with both information about job opportunities suitable to their field of training, and employment opportunities during the recruitment sessions. In view of these efforts, aimed at ensuring students' smooth transition into employment, combined with a lack of progression pathways and the other difficulties encountered by VET-LSEG students interested in pursuing HE, it is not surprising to observe their low participation rate in HE.

The government recognises that the country's economic and technological developments require VET students to graduate with higher and more sophisticated skills, thus, their recent policies aimed at improving the skills and knowledge of the workforce through the VET system. The most significant of these policies, relevant to the VET-LSEG students' opportunity to participate in HE, is the 70-20-10 strategy, in which government funded VET institutions, especially the vocational colleges, are required to progress 80% of students in every cohort into the work market and 20% students into HE studies. Its purpose was to ensure that VET graduates who are suitably able and qualified, progress through to related HE studies, in order to acquire the necessary higher level skills and qualifications.

Questions have been raised, however, about the effectiveness of the 70-20-10 policy in assisting the VET-LSEG students, especially those from poorer households and

rural areas, to attain HE. Of the 20% top scorers in every cohort selected to progress to HE, it is unlikely that many students will come from LSEG backgrounds as students from better backgrounds tend to score higher results. The literature also shows that poorer VET-LSEG students usually come from rural areas which consist of colleges with poorer facilities and teaching staff, and that offer less sophisticated programmes compared with VET colleges in city areas or near to MTUN institutions (James et al., 1999; Marwan et al., 2012; Razaq & Abidin, 2007). This less advantaged school environment could also disadvantage the learning of VET-LSEG students and subsequently limit their potential of scoring good enough results to qualify in the top 20% cohort and pursue HE.

Furthermore, James et al. (1999) has suggested that school teachers and counsellors show a greater tendency to persuade poorer students to progress to work than to study. It is more likely, therefore, that students from poorer families, especially those from rural areas, may be advised by their school teachers or counsellors to work rather than to study. This is particularly likely in view of the limited opportunities for HE study and the eagerness of VET institutions to meet workforce production targets. In addition, the ambiguities within the policies and the insufficient flow of information from policy setters to the VET institutions, create concerns for the teachers and counsellor, when preparing students for HE.

VET-LSEG students from poorer areas face the risk, therefore, of being disadvantaged and sidelined when compared with other VET students from better financial and educational backgrounds, both in terms of meeting the top 20% requirements or getting guidance in preparing for HE. In addition, these issues also created concerns about the effectiveness of VET institutions in preparing students for HE.

Therefore, this study suggests that the opportunity of VET-LSEG students to progress for HE is affected by unhelpful government education policies and strategies, which do not facilitate sufficient and effective pathways for students from less academic backgrounds. Under the government's new transformation programme, MTUN and 70-20-10 strategies are both implemented in order to create official progression pathways

within the public education system. Though the progression pathways are created under the implementation of these new policies, these available pathways have not proved useful for VET-LSEG students, especially those from poorer and rural areas. The questions and concerns raised in this study demonstrate the flaws in the new MTUN and 70-20-10 strategies. These policies require careful consideration and re-examination in order to ensure their successful execution and more importantly that all students are provided fair opportunities to participate in HE.

Summary to section 1

In summary to section 1, this study concludes that the lack of opportunities to participate in HE is the significant barrier to HE encountered by the VET-LSEG students in Malaysia. The findings suggest that the opportunities of VET-LSEG students to participate in HE are significantly affected, positively and negatively, by six contributing factors, including the financial difficulties, students' adverse family background, their low confidence, the social influence, the students' culture, and the Malaysian education system that has not worked in the interest of these students. Among all, the financial difficulties, the students' adverse family background, the students' low confidence, and the unhelpful education systems are highlighted as the four factors contributing most difficulties to VET-LSEG students to participate in HE.

The factors highlighted in the study enable the construction of strategies designed to overcome the barriers to HE encountered by VET-LSEG students in Malaysia. The strategies aim to not only overcome the barriers, but also to magnify the positive influence of some contributing factors, including the positive social influence and the positive cultural values and beliefs towards HE.

Section 2: Suggestions for Overcoming Barriers and the Roles of Stakeholders

Research question 3: How can the barriers to progression be overcome so that HE is more accessible to VET-LSEG students?

Research Question 4: What are the roles of major stakeholders in contributing to the success of overcoming the barriers to HE faced by the VET-LSEG students?

Overcoming the barriers

In view of the barriers experienced by the students; lack of opportunity to participate in HE, and its contributing factors established in section 1, five strategies have been identified to enable VET-LSEG students to overcome these barriers; revision of financial assistance schemes, better information flow about opportunities and support for HE study, improved collaborations between relevant parties and major stakeholders, ensuring students' smooth transition from VET to HE, and enhancing the provision of second-chance education route.

The construction of these strategies considered the Malaysian legislative system and education guidelines, such as the Education Act 1996 and Malaysian Qualification Framework; relevant education plans and strategies, such as the Malaysian Education Blueprint 2013-2025 and the Tenth Malaysian Plan 2011-2015; and the structure and operation practices of the Malaysian educational system as a whole. Each strategy is presented separately in the following section, where the roles of the major stakeholders in each strategy also included.

Strategy One: Revision of Financial Assistance Schemes

The major FD encountered by VET-LSEG students is the direct cost of HE that includes tuition fees and living expenses as well as trivial expenses such as application fees and postage fees. As discussed, although financial assistance for HE purposes is available in Malaysia, such as scholarship schemes and education loans, these schemes were found to be ineffective in alleviating FD for VET-LSEG students. This is because scholarships are based on academic merit and, therefore, inaccessible to VET-LSEG students, and the education loans are deemed unattractive due to students' fear of incurring debts which they would be unable to pay back after completing their studies.

The seriousness of the FD as a significant barrier contributing to barrier justifies the need for the provision of financial assistance to VET-LSEG students, while the inaccessibility of the financial assistance that is currently available justifies the need to revise the assistance schemes. The main aims of the revised schemes suggested here are to make the financial assistance both accessible and appealing to VET-LSEG students. The strategy is summarised in *Figure 6.2*.

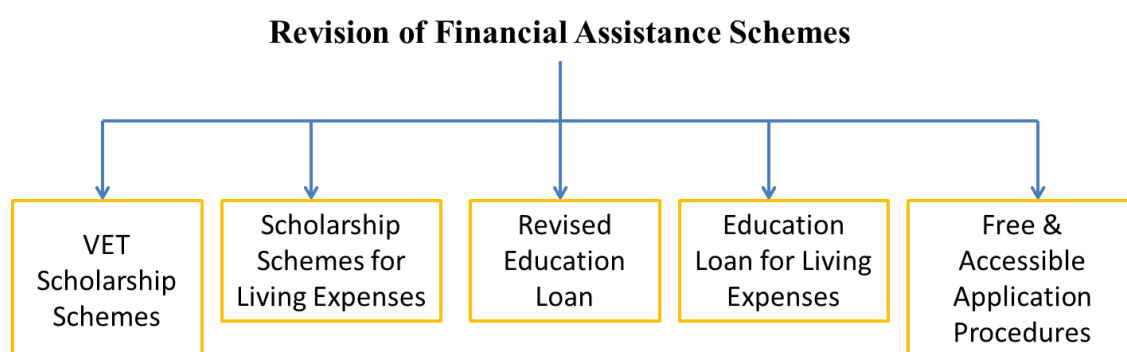


Figure 6.2 Strategy 1: Revision of Financial Assistance Schemes

VET Scholarship Scheme

In view of VET-LSEG students' reluctance to take up education loans, it is important to ensure that they are provided with alternate financial assistance schemes, such as scholarships. This research suggests that of the financial assistance that is available, scholarships are preferred over education loans. Strategies that ensure scholarships are accessible to students from VET backgrounds, especially VET-LSEG students who are unable to afford, are warranted.

While this study recognises the effectiveness of current scholarship schemes in supporting students from academic backgrounds, it also acknowledges the impact of assessing VET students alongside such students. The current process for accessing scholarship applications does not take into account the impact of the different grading system used for VET and academic students. Instead of proposing changes to the current scholarship schemes, therefore, by merely incorporating VET certifications as part of the eligibility criteria, this study suggests it is more feasible to develop a separate scholarship model, aimed specifically at students with VET backgrounds. The new VET

scholarship model would overcome the disadvantages suffered by the VET-LSEG students within the current scholarship schemes, including their ineligibility due to their VET qualifications, and the inherently biased assessment which favours students with an academic background.

The VET scholarship scheme would prioritise students from VET backgrounds by recognising VET qualifications in the selection criteria and offering the scholarships specifically to students with VET qualifications. The VET scholarship model would benefit VET-LSEG students through:

- Enabling them to compete for funding with students from similar VET backgrounds, based on selection criteria that emphasise VET certifications. This provides a fairer, more equitable scheme than the current scholarship schemes.
- Ensuring more suitable progression pathways are developed and offered to VET-LSEG students because scholarship awards attract potential students, and the potential students motivate more HE institutions to take up the challenge of developing and offering more VET related HE programmes.

VET scholarship schemes have been adopted by many countries, for example, the Transfer and Trade-School Scholarships in United States and the Pathway Access Scholarships in Australia (Australian Education Network, 2016; Scholarship America, 2013). Similar to these schemes, the proposed new VET scholarship model can be adopted by the Malaysian federal government or state governments, who currently offer scholarships that to students with academic backgrounds. Alternatively, the scholarship scheme may be co-funded by governmental agencies and HE institutions in Malaysia or government and industrial partners.

Scholarship Schemes for Living Expenses

As discussed, VET-LSEG students have been identified in this study as unable to afford both the tuition fees and the living expenses that come with HE studies. These costs are significant, especially for students from rural areas who need to either travel or move to a different town for their HE studies. The research identified students who were

prevented from progressing to HE, due to their inability to afford the necessary living expenses. Due to the fact that most financial assistance packages in Malaysia only provide tuition fee support, a separate scholarship scheme supporting living expenses is required to ensure VET-LSEG students can participate in HE.

The recommended scheme would be similar to the *Need Based Grant for Living Costs* in United Kingdom (UK) or the *Relocation Scholarship* in Australia (Australian Department of Human Services, 2016; European Commission, 2015) in existence at the time of writing. The new scholarship for living expenses scheme should focus on supporting the students' living needs during the course of HE study, and include food, travelling and accommodation. Eligibility criteria would include household income and a justification of the students' need to relocate from home for their HE studies. These eligibility criteria would ensure that only students from the LSEG, with a genuine need to relocate from home for their HE studies, are awarded the scholarship.

All organisations that are currently offering scholarships and other types of financial assistance to students in Malaysia, including the Malaysian federal government, state governments, governmental agencies like MARA and other Non-Governmental Agencies like Koperasi Jayadiri Malaysia Berhad (KOJATI) are suggested to offer this scheme. The proposed scholarship scheme for living allowance would solve the financial needs of VET-LSEG students, especially those from poorer households and rural areas. The availability of such scholarships would help ease the financial burden to the students' families, and potentially reduce parental resistance to allowing their children to pursue HE studies.

Revised Education Loan

The Education loan referred to in this section is the PTPTN loan which is traditionally more accessible than other education loans offered through the NGOs and financial institutions in Malaysia. These loans are more accessible due to their more lenient application eligibility criteria and zero interest repayment. Students are allowed to pay back the loan after completing their qualifications and the loan balance does not accrue interest. In general most Malaysian students are eligible to apply for the PTPTN

loan as long as they study an MQA accredited HE programme in a HE institution approved by the Malaysian Government. Such rates for applicants who meet the loan criteria is high.

Despite the increased accessibility of the loans, this study that the VET-LSEG students were reluctant to apply for them, due to their fear of incurring debts and not being able to pay them back after completing their HE studies. In addition, the PTPTN does not cover the full educational costs, for example the tuition fees and initial application fees, which subsequently caused some students to give up on HE due to their inability to pay the balance not covered by the loan.

While the study acknowledges the benefits of the PTPTN loans, it also recognises its imperfections, which result in students' inability or reluctance to access them. In view of this, this study proposes that the PTPTN scheme remains, but is subject to revision. Three revisions are proposed as follows, these revisions may also be considered by other education loan providers:

- *Funding the full education costs* of students in need. In this regard, the amount funded would be decided upon, based on the household income and financial situation of the applicants. An amount of total household income per family member (calculated using total household income divided by total household members) can be set as a guideline. Students who are unable to meet the minimum household income per family member would be eligible for a loan encompassing full education costs, including the tuition fees and other incidental costs. This revision of the existing loan structure, overcomes the obstacles which prevent students from progressing to further study, that of their inability to afford the education fees not covered by the current education loans. The release of full amount also provides students with better financial confidence to enrol and progress with their HE studies.
- *A more lenient repayment scheme* which enables students to start their loan repayments after getting employed or after reaching a certain level of monthly income. A similar model can be observed in the repayment thresholds and rates for the compulsory repayment of Higher Education

Loan Program (HELP) in Australia where students commence repayment after gaining employment and the repayment amount is determined based on their annual income (Australian Taxation Office, 2016). This more lenient repayment scheme can be targeted towards students with a LSEG background or from poorer households who meet the eligibility criteria of the scheme. A more lenient repayment scheme helps strengthen students' confidence in accepting the loan offer and may help relieve their concerns about the debts incurred, particularly if they have trouble finding employment after their HE studies.

- *A discount scheme on the loan repayment* may be provided to VET-LSEG students who do well and complete their HE studies successfully. The repayment discount reduces the loan amount and makes the repayment less threatening. As a result, it could encourage VET-LSEG students, who are usually not eligible for scholarships, to apply for the education loan. The loan providers could set up a discount scheme that awards students discounts according to their results, for example 100% waiver for first class honours, 50% for upper second class, and 25% for lower second class, similar to the practise adopted by MARA. The repayment discount makes education loan less threatening and more applicable to VET-LSEG students, especially those who are likely to give up HE due to concerns about not being able to repay the loan after completing their HE studies. In addition, the effective discount scheme would also help motivate the students to work harder towards achieving good results in their HE studies, so that they can be eligible for more discounts.

Education Loan for Living Expenses

As most scholarships and education loans only cover tuition fees, many students find it difficult to afford the additional living expenses, this study also proposes a new education loan designed to support students' living expenses. The education loan for living expenses would be similar to the proposed Scholarship Scheme for Living

Expenses, but only available to students in need of financing their living expenses during the course of their studies. The eligibility of the students would also be assessed according to their family's household income and their justification for relocating from home for their HE studies. The loan could also be provided as alternate option for students who fails to repay the scholarship for living expenses. In order to ensure VET-LSEG students, especially those from poorer households, receive full advantage of the loan, it should be offered with zero interest on repayment, with repayments commencing after gaining employment, or reaching a certain level of monthly salary.

Free and accessible application procedures

In view of the difficulty some VET-LSEG students experience in affording even trivial expenses such as the HE application and administration fees, this study recommends that application procedures for both financial assistance and admission to HE studies be reviewed, so that they are easier to access and do not incur a cost to the LSEG applicant. The suggestions include waive the application and other administration fees, making VET institutions the main contact point, and enabling *regular visits from financial assistance providers to VET institutions*:

- *Waive the application and other administration fees* for students from LSEG backgrounds whose eligibility is assessed based on their financial situations. This will ensure that students from poorer households are exempted from application and administration fees that are trivial to education institutions but burdensome to the students.
- *Make VET institutions the main contact point* for students and providers of financial assistance schemes and HE studies. VET institutions would then take responsibility for compiling updates and information from the providers and delivering them to students. VET institutions could also help to collect applications and deliver them to the respective providers. In order to ensure the required information reaches the students, the HE and financial assistance providers could pay routine visits, once or twice a year, to the VET institutions, to provide updates to students and parents.

- *Regular visits from financial assistance providers to VET institutions* should occur in order to conduct student counselling and deliver seminars about the financial assistance schemes that are available. These visits will allow students to talk directly to the providers about their eligibility for financial assistance and receive guidance in preparing their applications. This is especially important for VET institutions in rural areas that are usually excluded from circulation of information relating to available financial assistance and progression opportunities.

These amendments to the application procedures would not only make the application process easier for students, but also avoid the risk of students giving up their opportunity to participate in HE because of their inability to afford trivial costs.

The revised financial assistance schemes discussed above are more suitable for the needs of the VET-LSEG students, and will make financial assistance more accessible to them. These changes would assist in addressing some of the financial difficulties encountered by these students and subsequently improve their opportunity to participate in HE. The revised financial assistance schemes should also help to build the students' confidence in setting HE as a target, and then working towards achieving this target.

Strategy Two: Better Information Flow

While this research has found that the VET-LSEG students get most of their information and advice from their respective VET institutions, it has also highlighted the insufficiency and ineffectiveness of this information flow in helping students to make informed decisions. Students, especially those from poorer households, failed to get both relevant and required information to enable them to progress to HE. Due to this, they face the risk of being misguided by either a lack of information or inaccurate information, resulting in their being steered into taking up the employment option rather than further study (see chapter 2 under Social Influences by School Leaders).

The difficulties encountered by VET-LSEG students indicate the need for better and more direct information flow, especially between the VET-LSEG students and the

providers of suitable progression pathways and financial assistance. In view of these, two strategies are proposed to mitigate these difficulties; the development of an independent information channel and direct counselling for VET-LSEG students.

Independent information channel (IIC)

The proposed Independent Information Channel (IIC) would provide students with a separate pathway to obtaining information relating to both the opportunity to participate in HE and available financial assistance schemes. The IIC would be useful in not only ensuring that useful and relevant information be distributed equally and accurately to all students, but also in avoiding the possibility that useful information is missed by or withheld from any specific group of students, especially those from LSEG or disadvantaged backgrounds.

The ideal IIC would be specific for students from VET or with skills backgrounds, and must also be publicly available and openly accessible to all Malaysian students, regardless of their socioeconomic background and geographical locations. In order to achieve these outreach criteria, two strategies are proposed; a VET Newsletter containing information about progression should be developed, and direct counselling by HE and finance providers should be made available to VET-LSEG students. These strategies are summarised in *Figure 6.3*.

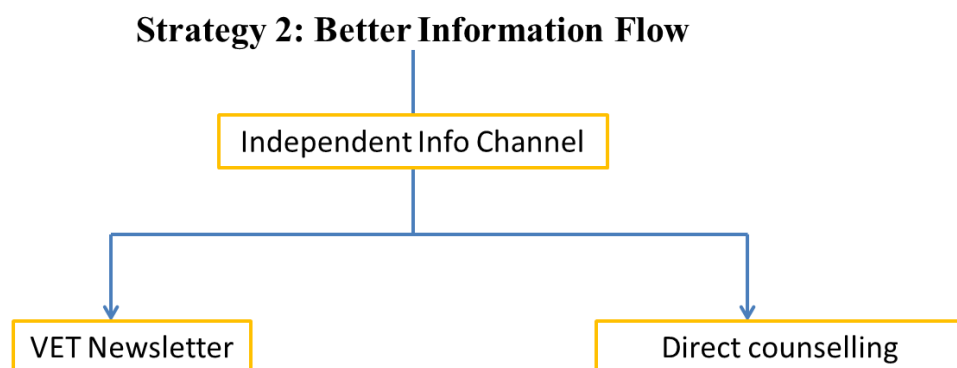


Figure 6.3 Strategy 2: Better Information Flow

VET Newsletter

The newsletter should target the needs of students from a VET background, and provide updated information that is relevant to both their current educational development while studying the VET programmes, and their options for future progression after completing their VET studies. Important information to be included in the newsletter would include new developments in VET nationally and internationally, successful stories of VET students or graduates, progression opportunities for students with VET backgrounds, opportunities for progression to both HE and employment, and assistance schemes that are available and suitable to the needs of students with VET backgrounds.

The newsletter could be made available either annually, half-annually or quarterly to coincide with the graduation date of VET students, enrolment dates of HE institutions or recruitment date of industries. The target audience for the newsletter include existing students, alumni and school leaders:

- Existing students of VET institutions in order to keep them informed with up to date information so that they are motivated and can make informed decisions about their progression after completing VET studies.
- Alumni of VET institutions, especially those who miss the chance to progress to HE after completing their VET studies. This will keep them informed about the available opportunities so that they can return to HE studies when they are ready.
- School leaders of VET institutions to ensure they are kept constantly informed with the updated information when counselling students.

The newsletter could also be accessible to other important stakeholders, including HE institutions, providers of financial assistance, relevant industries, and the general public:

- *HE institutions.* This has the potential to motivate them to consider developing and offering progression pathways and other support to students from VET backgrounds to progress to HE studies.

- *Providers of financial assistance.* This will keep them informed about the latest developments in VET and the needs of students from VET backgrounds.
- *Relevant industries.* This will keep them informed about the latest developments in VET and the potential of students from VET backgrounds, to contribute to their industry, thereby potentially creating employment opportunities for the students.
- *General public.* This will help to improve the image of VET and students from VET backgrounds in Malaysia.

The newsletter should make available in hardcopy format and posted to all targeted stakeholders, especially the existing students and alumni. This recommendation will ensure that readers with no/little access to the internet, especially those in remote and rural areas, are not left out of the information loop. In addition, the newsletter can also appear in softcopy format and be delivered through email and made available through social media such as Facebook and Tweeter.

In order to ensure the newsletter contains accurate and relevant information, it is proposed that it is administrated by the MOE-Division of Technical and Vocational Education and Training (MOE-TVET). The MOE-TVET is suitable due to their access to all relevant information about education and students' development in Malaysia. Their close collaboration with other governmental and non-governmental agencies also enables them to access updated information on financial assistance. Their collaboration with relevant stakeholders, especially the financial providers and industries, allows them to negotiate relevant sponsorships and employment opportunities for students and VET institutions.

A newsletter for VET students and VET alumni is not a new idea; similar newsletters can be found throughout Australia. For example, in NSW the school-based apprenticeships newsletter is printed by the NSW Department of Education and Training for TAFE students in Australia (NSW Department of Education and Training, 2006) and Students Connect is printed by Queensland Curriculum and Assessment Authority to

provide advice about future education and career pathways to year 12 students in Queensland (Queensland Curriculum and Assessment Authority, 2016). Both newsletters provide a good reference point for the MOE-TVET in developing the proposed newsletter for VET students and alumni in Malaysia.

The independent newsletter would benefit to VET-LSEG students in overcoming the barrier they experience in progressing to HE in at least four ways. First, the information about the available progression pathways can serve as guidelines for students to plan their progression to HE. Second, the information on available pathways and financial assistance schemes serves to strengthen their aspirations for HE and keep them working towards achieving HE. Third, the newsletter would help re-engage previous VET-LSEG graduates, especially those who missed the opportunity to progress to HE, and encourage them to return to HE studies. Finally, avoids the risk of VET-LSEG students receiving information from their school leaders that may be filtered and subsequently impact their ability to compete for financial assistance and progress to HE.

The newsletter would also empower the VET-LSEG students with necessary knowledge and information so that they can make informed decisions about their future progression. The inclusion of information about work opportunities in the newsletter would also enable students to compare their choices between HE and work opportunities, and make informed decisions that are in their own best interest. This study found that the VET-LSEG students appreciated such information and opportunities but that they were not provided.

Direct counselling for VET-LSEG students

In order to enhance information flow, the second strategy proposed in this study is that HE institutions and financial assistance providers conduct regular visits to VET institutions in order to meet students, and provide seminars and counselling sessions about the opportunities to progress to HE and to obtain financial assistance. Such visits would be helpful to VET-LSEG students as it provides them with up-to-date information, opportunities to discuss their options, and have their application for HE assessed:

- *Up-to-date and first-hand information from the providers* helps avoid the risk of students receiving filtered or incomplete information through a third party, such as VET teachers or school counsellors.
- *Discussions about their potential progress to HE studies* with staff from HE institutions provides students with guidance about their preparation for progression to HE studies.
- *Discussions about their eligibility for financial assistance* with finance providers enables students to receive guidance in preparing their application for financial assistance.
- Submitting their applications for HE studies or financial assistance directly to the HE institutions and/or providers of financial assistance schemes during their visits would help students from rural and remote areas as it would save them the costs of submitting their application.
- The HE institutions and financial providers would be able to assess student applications during their visits, thus expediting the process and also providing more rapid replies to students.

The success of this strategy requires a close collaboration between the VET and institutions and the financial assistance providers. Such collaboration remains an issue, however, as indicated by the less than satisfying outcomes of the previous MOU strategy, where VET institutions failed to initiate collaborations with HE institutions due to a lack of government intervention. This failed strategy highlights the importance of government intervention, especially in ensuring that collaborations between institutions take place. Thus, in order to ensure the success of the strategy proposed here, the government must be involved in not only initiating the strategy through assigning roles to the respective parties, but also in initiating collaboration between the involved parties, and in monitoring the progress in order to ensure that each party plays their role in executing the strategy successfully.

Strategy Three: Improved Collaborations

The lack of effective collaboration between key stakeholders is the major factor found to have contributed to the barriers encountered by VET-LSEG students in progressing to HE studies. The findings of this study indicate that the lack of collaboration between VET and HE institutions in particular, has resulted in a lack of HE programmes suitable for VET-LSEG students, and a reluctance of HE institutions to admit VET-LSEG students to their programmes. In addition, the VET-LSEG students' confidence in progressing to HE studies, and the assistance they receive in preparing to do so have also been affected by this lack of collaboration. This study proposes, therefore, an improved collaboration between the VET and HE institutions and other major educational stakeholders. In this regard, three sub-strategies are proposed: collaboration between institutions, collaboration between MTUN and relevant industries, collaboration between accreditation bodies and accreditation boards, and collaboration between government and industries. The sub-strategies that are proposed were inspired by the successful experience of UMET, documented in the institution-focussed case study of this research (see Chapter 5).

Collaboration between Institutions (CBI)

The collaboration between institutions (CBI) refers specifically to the various collaborations between VET and HE institutions that can benefit VET-LSEG students, especially in overcoming the barrier to HE caused by the policies and operations of the various education systems in Malaysia. Five important CBIs are highlighted for improvement: the collaboration between VET institutions and MTUN institutions, collaboration between VET institutions and other HE institutions, collaboration between MTUN institutions and other HE institutions, collaboration between MTUN and relevant industries, and collaboration between accreditation boards. These collaborations are summarised in *Figure 6.4*.

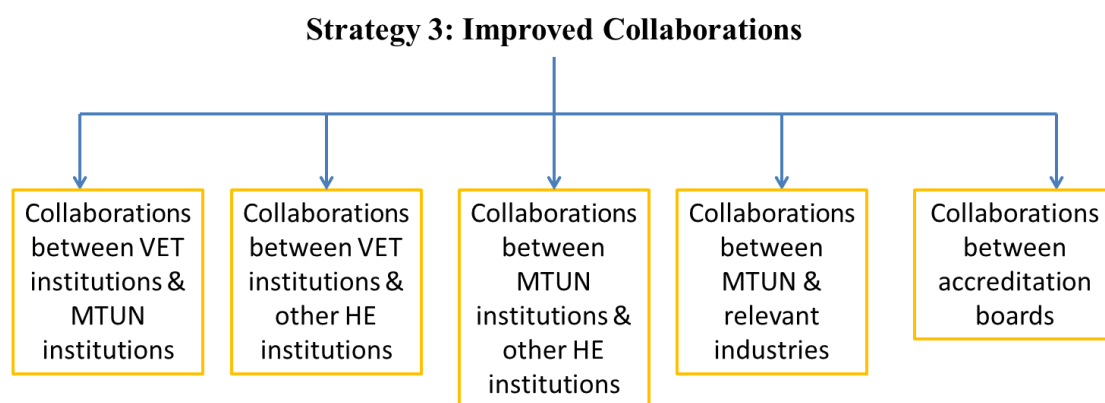


Figure 6.4 Strategy Three: Improved Collaborations

Collaboration between VET institutions and MTUN institutions

The collaboration between VET and MTUN institutions is proposed in recognition of the government's intention to make MTUN institutions the major HE institutions offering VET-related HE programmes to students from VET backgrounds, including VET-LSEG students. In order to ensure the MTUN's HE programmes meet the needs of these students, it is important that the HE institutions collaborate and work closely with the VET institutions, especially the vocational colleges that will supply most of the students to MTUN for the HE programmes (Economic Planning Unit, 2010c). Although this proposed strategy requires action by VET and MTUN institutions, it would also be useful for other HE institutions interested in or planning to develop progression pathways specifically to VET-LSEG students to consider.

The collaboration that is proposed would enable VET institutions to share knowledge and expertise with MTUN institutions, which would benefit in many ways, especially in terms of programme structuring and curriculum design. The input of the VET institutions would assist MTUN institutions to construct HE programmes with course content that aligns with the existing VET programmes. In addition, sharing information about the learning habits of VET-LSEG students would enable MTUN institutions to provide teaching and learning support that is suitable and effective.

Close collaboration would also benefit VET institutions as it enables them to receive up-to-date and accurate details about available progression pathways and HE

programmes. This is important for the preparation of VET-LSEG students for progression to HE studies. In addition, the exchange of expertise and experience with MTUN institutions would enable VET institutions to learn about the standards and requirements of HE institutions. Such understandings would provide a good reference point for institutions aiming to improve their existing VET programmes and bring their teaching practices into alignment with the HE standards in Malaysia.

The collaboration between the VET and MTUN institutions is beneficial to VET-LSEG students in at least three ways. It ensures the availability of progression pathways and supports for teaching and learning, and ensures VET-LSEG students are provided with adequate information about HE:

- *Relevant and suitable progression pathways* that align with previous fields of study undertaken by VET-LSEG students would be developed and offered through MTUN institutions. Such relevant and suitable progression pathways provide VET-LSEG students with assurance that their training will both improve their knowledge and skills and provide them with a higher level qualification.
- *Relevant and suitable teaching and learning support* would be provided to VET-LSEG students during their HE studies, enabling them to experience more familiar learning environment. Such support should improve students' ability to both cope with and complete their HE studies successfully.
- *Accurate and updated information* about the available progression pathways and suitable HE programmes would help VET-LSEG students to prepare and apply for admission to HE studies more effectively.

The benefit of collaboration between HE institution and VET institutions is evident at UMET (see Chapter 5) in that it enabled the institution to design and offer more effective HE to VET-LSEG students, and provide better support to VET institutions in their promotion of UMET's HE programmes. As a result, VET-LSEG students were found to have more confidence to prepare for opportunities and apply to participate in HE studies.

Collaboration between VET institutions and other HE institutions

Although MTUN institutions have been officially assigned to develop and offer progression pathways to Malaysian students with VET backgrounds, this study has determined that they might be unable to accommodate the large numbers of students graduating from diverse fields of studies from VET institutions. In view of the limited capacity of MTUN institutions, it will be important for VET institutions to collaborate with other HE institutions in order to maximise the number of suitable progression pathways and HE programmes available to VET-students. Increased and wide-ranging collaboration between institutions will be beneficial to VET-LSEG students as it can potentially lead to more progression pathways and thus better opportunities for progression to HE.

Collaboration and knowledge exchange between HE and VET institutions would also enable the former to gain a better understanding of potential of VET-LSEG students. Such enhanced understanding would not only help improve the image of the VET-LSEG students, but also mitigate the traditional bias HE institutions display in admitting VET-LSEG students. In addition, this close collaboration would enable HE institutions to learn from the VET institutions, especially in regards their knowledge in designing and offering work-based and hands-on education and training programmes. The inclusion of experiential learning of this kind would improve their existing HE programmes, make them more sensitive to the demands of the workplace and more closely aligned to the needs of industry.

Collaboration between MTUN institutions and other HE institutions

The nomination of MTUN institutions from among all the HE institutions in Malaysia to offer VET related HE programmes might result in them being perceived as an entity separate from the Malaysian HE system. Such a perception may have a negative impact on both the MTUN institutions, and the students that will graduate through these institutions. If the MTUN institutions are perceived as part of the VET system they may receive less recognition and be less valued when compared with other

institutions in the mainstream HE system. Students graduating with HE qualifications through MTUN institutions may be less valued than students graduating through mainstream HE institutions, and hence less competitive in the job market and thereby slowing their career development.

In order to avoid such a situation, this study recommends that the MTUN institutions maintain close collaborations with other HE institutions, especially the more established universities in Malaysia. The collaboration may cover a wide spectrum of events from dual degree awards and student activities to academic research and development. Close collaboration would benefit all parties, for examples the sharing of facilities and resources between institutions. Other than these operational benefits, being perceived as part of mainstream HE institutions, would prevent the MTUN institutions from being regarded as less prestigious than those HE institutions that are viewed as a benchmark in Malaysia. Equal recognition of MTUN institutions is beneficial to VET-LSEG students as it ensures that they receive HE qualifications that are recognised as equal to those received by students who have graduated through the mainstream academic system. Such a perception of equality would help VET-LSEG students to not only stay competitive in the job market, but also to progress to postgraduate education, whether it is within MTUN institutions or at the partnering HE institutions.

Collaborations Between MTUN and Relevant Industries

The case study found that UMET owed a big part of its success in offering VET related HE programmes to its collaboration with the relevant industrial partners. Through such collaboration, the industrial partners provided UMET with useful input into effective curriculum design, shared their facilities and contributed both financial and in-kind support to ensure that UMET provided effective education and training, and enabled students to achieve quality learning outcomes. For the MTUN institutions to be effective in offering VET related HE programmes to VET-LSEG students, they will need to receive similar support from their industrial partners. This study recommends, therefore, that MTUN institutions establish collaborations with various industries,

especially those that are related to the field of studies offered through the participating institutions.

This study has highlighted three elements that industry and MTUN collaboration should focus on; partnering in programmes and curriculum development, partnering in student support, and partnering in staff support and development.

Partnering in programmes and curriculum development

Potential industry partners for MTUN institutions would include leading organisations or small companies that possess the specialty knowledge and up-to-date information on related industries. With such expertise, they could be involved in the structuring and development of the HE programmes and curricula of the MTUN institutions. Their involvement could be conducted formally through the establishment of committee panels with participation of representatives from related industries, or informally through casual consultation from the industrial partners.

The involvement of the industrial partners would benefit the MTUN in at least three ways. First, it enables MTUN to discuss and gather feedback that is useful to both improving the MTUN institutions' expert knowledge, and in developing programmes and curricula that meet the standards and requirements of the respective industries. Second, it provides MTUN institutions with an easier platform to negotiate or request support, especially financial and in kind support, that can help establish training facilities and resources. Third, it helps develop a sense of responsibility for the programmes among the partners, and motivates them to take ownership on the success of the offering. This could eventually drive the industry partners to provide any further support required by MTUN in conducting the programmes, such as sharing the facilities for practical training.

Partnering in student support

Collaboration with industry partners makes it easier for MTUN institutions to request financial and learning support for their students. There are three types of basic supports that would benefit students in the MTUN institutions, include the financial assistance for students to undergo HE studies at MTUN institutions, sponsorship or co-sponsorship for industrial employees, and learning supports for students:

- *Financial assistance for students to undergo HE studies at MTUN institutions.* MTUN institutions can negotiate agreements with industrial partners to provide financial assistance to students successfully enrolled in HE studies at MTUN institutions. The financial assistance could be in the form of scholarships or apprenticeships and be provided to both students newly graduating from the VET institutions, and those who have already graduated from VET institutions and started working in the respective industries.
- *Sponsorship or co-sponsorship for industrial employees.* MTUN institutions and industrial partners could sponsor or co-sponsor their employees, especially VET-LSEG graduates who missed out on earlier opportunities, to return to HE studies. The partnership agreement might also include classes conducted by MTUN at the work premises of the industry partners during weekends or after office hours, in order to encourage student participation, and/or to make it easier for the employees to study.
- *Learning support for students.* Close collaboration would make it easier for MTUN institutions to request the financing of training equipment, especially expensive specialty equipment which is difficult to obtain but necessary for the training purpose to the students. Arrangements with the respective partners may include hiring or direct sponsorship of the equipment. Such collaboration also provides MTUN institutions and their students with better access to practical training and OJT at the industrial partners' premises. This not only enables students to gain hands-on training in a real workplace, but also ensures that practical training and OJT, which are important and compulsory elements of most successful VET-related HE programmes, are embedded in MTUN programmes.

Partnering in VET staff support

Effective collaboration enables MTUN institutions to work together with industrial partners to develop and offer training programmes that help upskill and improve the

knowledge of the MTUN teaching staff. This is especially important when the HE programmes are required to incorporate rapidly changing specialty knowledge and technology. The training helps to equip teaching staff with the practical and updated knowledge that is crucial for effective teaching and learning.

Thus, the collaboration between the MTUN institutions and industrial partners not only enables suitable HE programmes to be developed for the successful progression of VET-LSEG students, but also provides effective support to the students. Such outcomes could reduce the gap between the Malaysian VET and HE systems, and boost students' confidence in succeeding in HE studies, thereby, contributing to overcoming existing barriers to their further education.

An effective collaboration also provides the industry partners with a better understanding of the HE programmes offered through MTUN institutions, which enables them to match core knowledge and skills with actual job positions in the industries. This alignment would enable them to offer suitable work opportunities to students graduating through these programmes in the future. Increased employment opportunity has the added advantage of strengthening the students' confidence in pursuing HE studies.

Finally, a successful collaboration reaps benefits for both the MTUN institutions and industrial partners. To the involved industry partners, the collaboration ensures their industry is provided with a workforce that has both suitable knowledge and more sophisticated skills. To the MTUN institutions, the collaboration enables them to receive the expert support that can help improve their academic and intellectual resources, and the financial and/or other in-kind support that can help improve their physical and technological resources.

Collaboration between Accreditation Boards

As has been discussed, in 2017, the Malaysian government will establish new accreditation boards to grant accreditation to VET programmes. An effective board will help to improve both the image and recognition of VET programmes. This research has identified, however, that there is a lack of capacity in these boards as currently envisaged, to both establish criteria for, and grant accreditation to programmes. In view

of this, it is recommended that these new accreditation boards collaborate with other pre-existing accreditation boards, especially those from a similar field of education or profession.

The new accreditation boards could develop a “joint accreditation process” with the established accreditation board and grant “joint accreditation” to the VET institutions or VET programmes. Launching from the good reputation of the established accreditation boards could improve the image of the VET programmes, and the reputation of the new accreditation boards. Similar practices can be observed in the Accreditation Council for Continuing Medical Education and Accreditation Canada International (Accreditation Canada, 2013; Accreditation Council for Continuing Medical Education, 2012).

In summary, collaboration between important stakeholders is important to ensuring suitable progression pathways are developed and provided to VET-LSEG students, and improving the VET-LSEG students’ opportunity to participate in HE and succeeding in their careers. Effective collaborations are also important in improving the efficiency of the VET and HE institutions to carry out their duty to provide effective education and training to VET-LSEG students. In view of the unsuccessful outcomes of the previous MOU strategy, where VET institutions failed to initiate collaboration with HE institutions, it will be important that the Malaysian government supports the initiatives and intervenes as where necessary to ensure the collaborations proposed are initiated and carried out successfully. The government can either set policies to instruct collaboration, especially between the different institutions and education systems, or provide subsidies or rewards that encourage collaborations between the stakeholders, especially between institutions and relevant industrial partners. The specific role of the government warrants further exploration, but more importantly, the government must understand that it plays a role, and be willing to initiate the necessary collaborations between these stakeholders where required.

Strategy Four: Smooth Transition from VET to HE

This research has identified that the different emphasis and structure of VET and HE programmes have resulted in a gap between the VET and HE curricula. This difference contributes to both a lack of confidence in VET-LSEG students in their ability to progress to HE, and a lack of capacity to cope with HE studies. In light of this, it is recommended that HE institutions, especially the MTUN institutions, be mindful during the construction of their programmes and curricula, to ensure that they do not present a barrier or increased difficulty for VET-LSEG students to progress to HE study. In this regard, three sub-strategies are proposed: aligned HE programme designs, effective learning support and effective bridging programmes. The strategy is summarised in *Figure 6.5*.

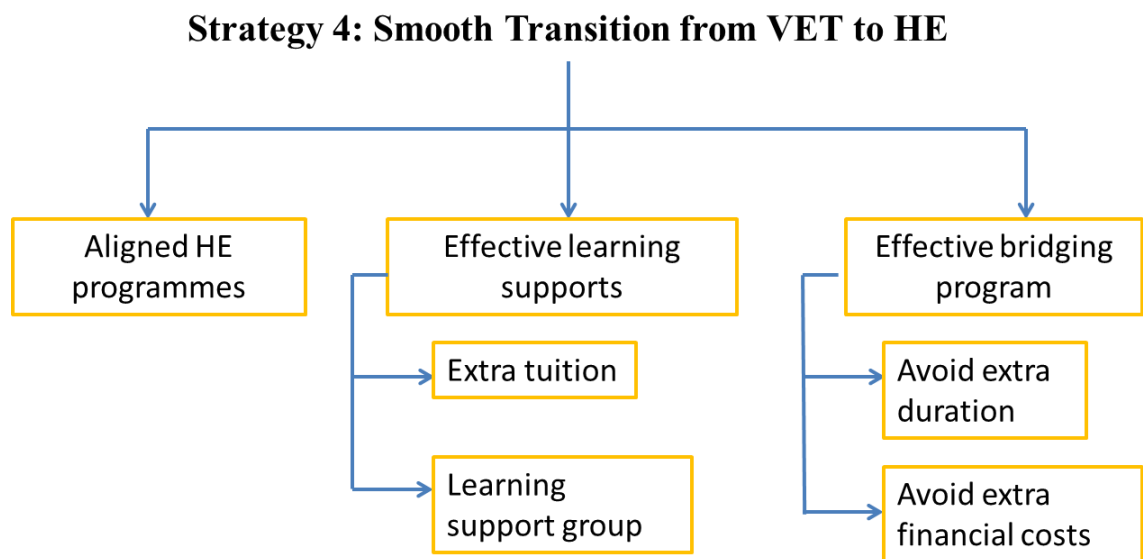


Figure 6.5 Strategy Four: Smooth Transition from VET to HE

Aligned HE programmes

The research suggests that it is important for HE programmes, especially those that are intended for the progression of VET students, to be designed such that they align with existing VET programmes. Aligned programmes provide the VET-LSEG students with better capability to identify suitable HE programmes, and relevant education and

training to help extend their existing knowledge and skills acquired through VET programmes.

In order to ensure the HE programmes align with the respective VET programmes, it is important that HE institutions, VET institutions and respective industries, especially those industry partners that are already in collaboration with VET institutions, work collaboratively to develop curricula and teaching and learning activities. Working with VET institutions enables HE institutions to have a better understanding of VET programmes, and develop appropriate progression pathways accordingly. Working with the relevant industries enables HE institutions to acquire useful knowledge about workforce requirements and industrial and technological developments. Such understandings are helpful in designing HE programmes that align with VET programmes, and that provides VET-LSEG students with the opportunity to develop more sophisticated knowledge and skills in their related field of studies.

Such a practice was observed in the UMET case study, where most HE programmes aligned with VET programmes offered through VET institutions, as well as specific careers in the respective industries. One such example is the Bachelor of Engineering Technology in Electrical (BET in Engineering) at UMET, where VET-LSEG graduates with a Diploma in Electrical Technology from a VET institution, are able to progress to the bachelor's degree, and onto a career path in the electrical and electronic engineering technology industry after completing the bachelor degree programme (see *Figure 6.6*).

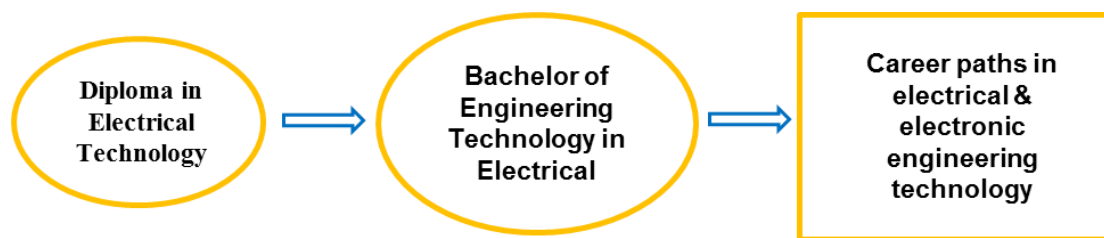


Figure 6.6 Sample Progression Path for VET related HE Programme

Effective learning support

The expectations of students' knowledge and skills also differs between the VET and HE programmes, with a lack of capacity of VET-LSEG students in theoretical knowledge and language skills having been identified in this study. As a result, these students subsequently have difficulties coping with HE studies. In order to resolve this problem, it is recommended that effective learning support be provided in form of extra tuition or learning support groups, to help students to cope with their HE studies.

Extra tuition

Extra tuition can be provided in subject areas that VET-LSEG students have difficulty coping with, especially those subject areas that are essential to preparing students for HE studies, but which are not provided during their VET studies. In this regard, the tuition classes may be conducted outside of the common schedule, such as at weekend or after-school hours. The tutorials could be conducted either by teachers of the respective subject areas or senior as postgraduate students, who have done well in that subject. Similar practices were observed in UMET where extra tuition was provided not only to VET students, but also to other academic students who failed. According to UMET, extra tuition is helpful not only in providing extra guidance but also in motivating students to put in the extra effort necessary to cope with their HE studies.

Learning support group

The purpose of the learning support groups is to help VET-LSEG students to cope with both HE studies and with the emotional stress that might arise during the course of their studies. VET-LSEG students enrolled in similar HE programmes could be divided into smaller groups of five to 10 students, guided by a group leader. An effective use of student learning groups was observed in UMET where students studying similar programmes were grouped into small learning support groups of 10 to 15 students. Each learning support group was led by either a school teacher or school counsellor who was responsible for conducting regular meetings according to the schedule prepared by the

respective faculty, monitoring the learning progress of the group members, and providing them with guidance when necessary.

According to UMET, the smaller group support enables students to receive personal attention and guidance from the responsible school teacher or school counsellor. The regular meetings also provided a structure which ensured that students made an effort to revise their studies and complete their schoolwork. Students who were grouped together also helped and motivated each other to undertake their studies and complete their assignments. Furthermore, small group learning is a common teaching method adopted in VET institutions, which makes it a relatively more familiar learning method for VET-LSEG students.

Bridging programmes

In this study, it was found that VET-LSEG students are usually required to undertake bridging programmes as a pre-requisite for HE studies, in order to equip them with the necessary knowledge and skills not previously provided during their VET studies (see Education System in Chapter 4 and Chapter 6). The bridging programme is usually a shorter term programme, ranging from one semester to one year, and contains theoretical subjects, such as Mathematics or English Language. VET-LSEG students are required to complete the programme successfully in order to get admission to study the HE programme.

Though it is claimed that the bridging programmes are necessary for preparing students for HE studies, this research found it affecting the VET-LSEG students' decision in pursuing HE, especially those from poorer households, forego the opportunity to participate in HE. These students were found to be either unwilling or unable to afford the extra time and costs incurred by the bridging programme progression requirement. Two possible solutions to this situation are recommended: *avoiding the extra duration of the bridging programme* and *avoiding extra financial costs*.

Avoid the extra duration of a bridging programme

Offering the bridging programme concurrently with the final stage of VET programmes would avoid the duration of an extra programme. The bridging programme could be offered to VET-LSEG students interested in or capable of progressing to HE studies, as extra curriculum electives during their final year of VET studies. Schedules that are customised to suit the capability of the students and help them to complete the whole bridging programme before completing their VET studies could be negotiated jointly by VET and HE institutions. This strategy would enable the students to avoid the extra time required to complete the bridging programme separately.

Avoid extra financial costs

If HE institutions were to waive the fee of the bridging programme or provide financial assistance to deserving students in term of scholarships or education loans, VET-LSEG students could avoid the extra financial costs. The cost of financial assistance could either be absorbed totally by the HE institutions that are recruiting the students or shared with the VET institution in which the respective students are currently enrolled. Absorbing the cost could be seen as a potential investment, on the part of the HE institutions, in students who would be studying with them and contributing fees for at least three years. Cost sharing, therefore, helps to ensure the successful progression of eligible students to HE studies, thereby enabling VET institutions meet their 20% students progression target under 70-20-10 policy.

The proposed strategy enables both the VET and HE institutions to meet their performance targets, namely progressing students and enrolling the students for HE studies respectively. Most importantly, the strategy helps VET-LSEG students to overcome the barrier caused by the extra costs and extended timelines that can potentially drive them to give up their opportunity to participate in HE. A similar strategy is observed in other HE institutions in Malaysia, such as the Taylor University and Sunway University, wherein financial assistance schemes, such as fee waivers or scholarships, are given to eligible students as a motivation to enrol for preparation programmes such as pre-university or matriculation programme (Sunway University,

2016; Taylor's University, 2016). At the time of writing, however, no preparation or bridging programmes were being run concurrently with VET programmes. The model is worth exploring, however, particularly in light of the previous recommendation that VET and HE institutions collaborate and coordinate their activities.

Strategy Five: Enhance second-chance education route (targeting aspired students who miss the chance to progress for HE):

VET-LSEG graduates who aspire to or are ready for further HE studies, but who delay their participation in HE due to their disadvantaged background, should be provided with a second-chance education route to HE study. The strategy is designed to motivate VET graduates, who may either be working or unemployed, to return to school, and to reengage those graduates who are ready for further education.

The second-chance education route can be developed and enhanced through various measures. Some useful proposals have already been discussed under Strategy Two and Three, including:

- Enhancing the information flow to VET graduates (See Strategy Two).
- Collaboration between HE institutions and relevant industries to motivate graduates to return for HE studies (see Strategy Three).

In addition to these strategies, two more are recommended that would enhance the second-chance education route for VET-LSEG students: provision of course credit and exemptions, and flexible or alternate learning. These two strategies are summarised in *Figure 6.7*.

Strategy 5: Enhance Second-Chance Education Route

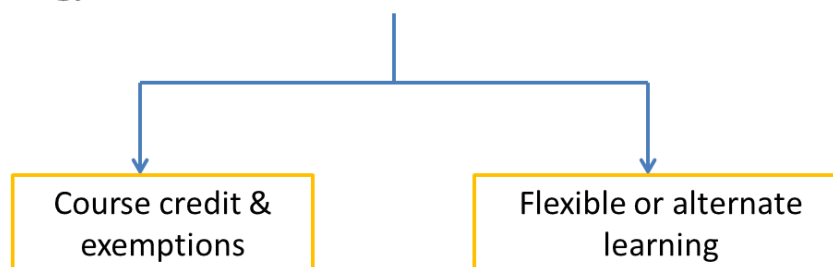


Figure 6.7 Strategy 5: Enhanced Second-Chance Education Route

Course credit and exemptions

MTUN and other HE institutions that offer progression pathways for VET-LSEG students, should recognise and grant course credit for the relevant professional experience and training undertaken by the VET graduates. This would require that HE to collaborate with both the industrial partners and relevant professional training organisations, to identify and assess the professional training that is relevant to the respective HE programmes for course credit and exemptions. Providing course credits and exemptions are beneficial to VET-LSEG students as they reduce the number of subjects they are required to complete. Less subjects help to both shorten the total duration of the HE studies and reduce the total cost of education, thereby potentially motivating VET-LSEG graduates to enrol in HE programmes. An example of note is provided by the Diploma in Accounting Programme offered through vocational colleges in Malaysia. The graduates of this programme are able to enrol in courses or subjects offered by the Malaysian Institute of Certified Public Accountants, and the subjects completed enable the students to claim course credits and exemptions for relevant units in a Bachelor Degree in Accounting offered through Malaysian HE institutions (Gerik Vocational College, 2016).

Flexible or alternate learning

MTUN and other HE institutions that offer progression pathways for VET-LSEG students should widen access to their HE programmes through the provision of flexible or alternate learning. Institutions should consider the appropriateness of conducting their programmes either partially or entirely through online learning and distance learning. Flexible learning is beneficial to VET-LSEG students because:

- It enables the students to continue to work while studying. This means that they can continue to earn and build their career while learning, which is especially important for students who will struggle to afford the costs of education while supporting the family.

- It enables the students to study without being physically at the HE campus. This means that students can either study at home or at their work place, which is especially helpful for students who have trouble travelling or living away from home.
- It provides more opportunities to participate in HE because the flexible learning mode gives HE institutions greater capacity to enrol more students, which indirectly increase the opportunities available for each HE programme.
- It enables students to save on cost as the fees for flexible learning are usually cheaper than those offered through traditional classroom modes. Being able to study at home also enables students to save on traveling and accommodation costs if the institution is located in a different city.

Although the flexible learning mode can produce promising benefits, it could also cause negative consequences for VET-LSEG students. The two major concerns include the lack of face-to-face support in flexible learning that could lessen students' motivation and commitment to learn, and the flexible learning might provide limited resources and learning support that are insufficient in helping students to achieve the required learning outcomes. In addition, students may not possess the resources, such as computer and internet access required for participation in the flexible learning, which could jeopardise or prevent them from achieving their learning potential. Thus, though flexible learning is worth exploring, it is a great challenge for HE institutions to make it work for VET-LSEG students. Careful consideration and planning is recommended, including the examination of the capacity of the VET-LSEG students to study in this manner and its suitability for the contents of the HE programmes, prior to adopting the idea.

Chapter Summary

In this chapter, the findings of this study were presented through a focus on each of the four research questions; these findings were presented in two sections. The first

section presented outcomes for research questions 1 and 2, and the second section presented outcomes for research questions 3 and 4. The chapter considered two aspects, VET-LSEG students' aspirations and their opportunities to continue to HE.

Five strategies were suggested to overcome the barriers to HE encountered by VET-LSEG students. These strategies include revamping the financial support system according to the needs of VET-LSEG students, ensuring effective flow of relevant information about suitable progression pathways, establishing relevant collaborations between major stakeholders, developing effective pathways and supports to facilitate students' smooth transition from VET to HE, and enhancing second chances and alternate learning pathways. These strategies are aimed at increasing progression pathways and improving the education support which would assist VET-LSEG students to progress for HE, and to complete their studies successfully. The strategies would also help to mitigate the gap between major stakeholders, especially the industry, the VET system and the HE systems in Malaysia, so that effective collaborations and synergies could be identified in order to produce outcomes that are beneficial to the education system, the economic system and the society in Malaysia as a whole. The next Chapter presents the conclusion of this study.

Chapter 7 Conclusion

This study was conducted to identify and understand barriers that prevent VET-LSEG students from progressing to HE. The analysis of data generated from a multi-method, multi-site and multi respondent study, indicated that the educational barriers encountered by the VET-LSEG students associate closely with their disadvantaged background, and in particular, their adverse financial situation, disadvantaged family background, low confidence, negative social influences, and discouraging cultural factors. The data also indicated that VET-LSEG students were prevented from progressing to HE by an education system that works against their participation in HE. While the study established the existence of educational barriers that prevent Malaysian VET-LSEG students from progressing to HE, it also identified their high educational aspirations. The students' high aspirations were reflected in their strong desire to progress to HE, and their determination to overcome the barriers that could cause them difficulties in attaining HE qualifications.

This study has contributed significantly to the literature and complements the Malaysian government's policy to ensure all its people have fair access to education. It is significant in four key ways. First, it highlights the educational aspirations of VET-LSEG students in Malaysia; students who have previously been perceived to have less interest in pursuing education. The high aspirations found in these students adds a new dimension to studies about the educational aspirations of Malaysian students, especially those from VET and lower socioeconomic backgrounds. Second, this study confirms the existence of educational barriers for VET and LSEG backgrounds within the Malaysian education system, a system that has tried to promote fair educational access to all. These barriers point to flaws in the education system which need to be addressed in order to meet the educational needs of Malaysian students. Third, the six factors found to contribute to educational barriers inform the focus of future studies aimed at addressing the barriers to HE encountered by students in Malaysia. Finally, the strategies formulated in this study inform the development of new policies that target the progression needs of VET-LSEG students. These strategies also promote the close

collaboration of major stakeholders, including industry, VET and HE institutions, in order to make HE in Malaysia more accessible to all students, especially those from vocational and low socioeconomic backgrounds.

Key recommendations resulting from the study

In order to target the identified barriers, while aligning with the Malaysian government's education policies and development plans, five strategies have been proposed :

1. Improve the financial support system in Malaysia, with a specific focus on the needs of VET-LSEG students, so that the assistance and support provided are attainable by the VET-LSEG students;
2. Improve the flow of information between major stakeholders, so that information about the available opportunities reaches the VET-LSEG students effectively and in a timely manner, allowing them to make informed decisions about HE;
3. Develop effective collaborations between major stakeholders to provide suitable progression pathways for VET-LSEG students;
4. Develop an effective support system that helps VET-LSEG students transfer effectively to HE studies, and also to complete their studies successfully, and
5. Develop suitable and effective alternative learning pathways that can re-engage VET-LSEG students who fail to progress to HE immediately after completing their VET studies.

This study suggests that using a social justice lens to examine the aspirations and intentions of disadvantaged students in Malaysia has provided valuable information that could be used to improve policy and institutional responses to creating opportunities for all Malaysians to pursue HE. The findings of this study suggest that there is still a big gap to fill for Malaysia to achieve fair and attainable higher education for every Malaysian. This gap was shaped, intentionally and unintentionally, by the inherited flaws within the education system as well as the prejudiced social perceptions towards the system which

as a result disadvantaged and denied a particular group of Malaysians, in this case the VET-LSEG students, the opportunity to obtain education which could potentially improve the adverse situation of their life. This gap does not reflect the National Philosophy of Education of Malaysia, which promises quality education for all Malaysians, and certainly does not reflect the country's mission to provide lifelong education to help to develop the full potential of every Malaysian.

Limitation of the study and strategies to manage limitations

This study was limited by three factors. Firstly, the strength of the findings have been limited by the respondents' lack of knowledge about the educational policies and strategies developed and implemented by the Malaysian government. An example by way of illustration, was the lack of knowledge amongst the respondents, especially the HE representatives and VET school leaders, about the implementation of the MTUN strategy aimed at providing progression pathways to VET-LSEG students. Such limited knowledge impacted upon the extent to which critical and informed discussions were possible. Though data were collected from different sources to verify information about such critical issues, the study was limited by the inability of specific participants to discuss and provide additional information and understandings from their perspective.

Secondly, the magnitude of the findings in this study was limited by the reluctance or hesitation of some respondents, especially the CAs and representatives from MOE and HE institutions, to criticise or comment upon the policies and strategies implemented by the Malaysian government. Though these respondents were assured of the confidentiality of their contributions and their anonymity in reporting of the findings, they were reluctant to go into any depth in their conversations. In particular, such reluctance was observed during discussions when sensitive topics relating to the educational systems in Malaysia that had received negative media coverage. Most respondents either avoided the topic, or after providing comments requested that they be excluded from the study. The hesitancy and reluctance of interview participants to

comment, limited the scope of the discussion, the extent of the data that could be collected, and the quality of the conclusions that could be drawn.

Thirdly, this study also encountered a challenge pinpointing the socioeconomic status of the student respondents due to the government and school policy to protect students' privacy. Such policies hinder access to personal information about students, such as their family profile and financial status. The inability to access the students' profile required the researcher to rely on the judgement of the respective school leaders to select students that met the selection criteria of the study. The LSEG status of the selected student respondents was subsequently verified through their responses to the first section in the questionnaires, thereby going part way to managing the dependency on the involvement of the school leaders.

The Way Forward

This study opens the door for further research into the educational outcomes and futures of VET-LSEG students after their completion of HE studies, especially in regards their employability and opportunities for obtaining employment. Future research could explore the perspectives of industry in relation to the reputation of VET-related HE and their receptiveness to these changes. The outcomes of such research would contribute to the evaluation of the effectiveness of VET-related HE programmes, in improving the VET-LSEG students' life and in meeting the workforce needs of the industry. Future research of this kind aligns with the Malaysian government's policy of ensuring that the education system is accessible to all and produces a workforce that meets the needs of the industry.

A follow-up study may be conducted on the five strategies formulated and proposed in this study. This new study could evaluate the strategies that get adopted and implemented by Malaysian government and/or other stakeholders, especially their effectiveness in resolving the barriers encountered by VET-LSEG students and improving these students' opportunities to participate in HE in Malaysia. The new study could also focus on the strategies that are rejected or bypassed by the relevant

stakeholders. In this regard, the reasons of rejection can be identified and evaluate in order to formulate better and more suitable strategies.

The research model and methodology adopted in this study can also be transferable to other countries, especially those with similar issues. In view that LSEG students' underrepresentation in HE is also a problem in many other countries such as Australia, US and UK (Allen et al., 2005; Bradley et al., 2008; European Commission, 2010), by adopting this study can help these countries not only to understand the issues but also to identify strategies that could help resolving the issues.

References

- Abdul-Hanid, M. F. B. (2011). Transformation of vocational education (Transformasi pendidikan vokasional). Retrieved from <http://fadzilmahasiswa.blogspot.com.au/2011/12/transformatasi-pendidikan-vokasional.html>
- Abdul-Karim, N. A.-H., & Ahmad, S. (2012). Human capital and the development of manufacturing sector in Malaysia. *OIDA International Journal of Sustainable Development*, 4(4), 105-114.
- Abdul Rahman, M. A. (2011). Malaysian institutional models in private higher education Vol. 1. QS WorldClass Asia (Ed.) *Showcase* (pp. 95). Retrieved from <http://www.qsworldclass.com/showcase/ebook.php>
- Abdullah, A., & Mustapha, R. B. (2001). *Technical education in the industrialization of Malaysia: Reforms, trends, and challenges in the new millennium* Paper presented at the First SEAMEO Education Congress, Bangkok.
- Abdullah, R., Mamat, W. H. W., Zal, W. A. A., & Ibrahim, A. M. (2013). Teaching and learning problems of the orang asli education: Students' perspective. *Asian Social Science*, 9(12), 118-124. doi: 10.5539/ass.v9n12p118
- Abdullah, S. B. (2012). Lifelong learning in Malaysia. Retrieved from http://www.kkselayang.edu.my/v3/muat_turun/penerbitan/lifelonglearning.pdf
- Abu-Hassan, F., Ishak, N., Yusof, H., & Abdul-Rahim, H. (2005). Poverty and education: Changing mindset of Malay community towards better academic education. *Penyelidikan Pendidikan (Educational Research)*, 7(December), 25-56.
- Accreditation Canada. (2013). Partnerships and collaboration Retrieved from <https://accreditation.ca/partnerships-and-collaboration>
- Accreditation Council for Continuing Medical Education. (2012). Other regulatory bodies. from ACCME <http://www.accme.org/about-us/collaboration/other-regulatory-bodies>
- Allen, L., Solomon, L., Storan, J., & Thomas, L. (2005). Higher education in the USA, student fees, financial aid and access *International comparators of widening participation in higher education-policy and practice series* Retrieved from http://www.heacademy.ac.uk/assets/documents/action-on-access/HE_in_the_USA.pdf
- Ambrose, I., Bonne, M., Chanock, K., Cunningham, C., Jardine, S., & Muller, J. (2013). "Like catching smoke": Easing the transition from TAFE to university. *Journal of Academic Language & Learning*, 7(2), A120-A131.
- Anand, S. (1983). *Inequality and poverty in Malaysia: Measurement and decomposition*. Washington, USA: Oxford University Press.
- Anderson, G., & Arsenault, N. (2004). *Fundamentals of Educational Research*. London: Routledge Falmer.
- Ang, E. (2010, 18 September 2010). The rising cost of education, Business, *The Star*. Retrieved from

- <http://biz.thestar.com.my/news/story.asp?file=/2010/9/18/business/7048908&sec=business>
- Arokiasamy, A. R. A. (2012). An analysis of globalization and higher education in Malaysia. *Business Intelligence Journal*, 5(1), 141-150.
- Arokiasamy, L., & Ong, S. F. (2008). The roles of public higher educational institutions in promoting formal lifelong education in Malaysia. *The Journal of International Social Research*, 1(4), 77-88.
- Arshad, F. M., & Shamsudin, M. N. (1997). Rural development model in Malaysia. Retrieved from <http://www.econ.upm.edu.my/~fatimah/rural.pdf>
- Asian Development Bank. (2016). Basic statistics 2015 Retrieved from <https://www.adb.org/sites/default/files/publication/158591/basic-statistics-2015.pdf>
- Australian Department of Human Services. (2016). *Student start-up scholarship*. <https://www.humanservices.gov.au/customer/services/centrelink/student-start-scholarship>
- Australian Education Network. (2016). *Pathways access scholarships*. <http://www.australianuniversities.com.au/scholarships/guide/9918-pathways-access-scholarships.html>
- Australian Taxation Office. (2016). *HELP, SSL, ABSTUDY SSL, TSL and SFSS repayment thresholds and rates*. <https://www.ato.gov.au/Rates/HELP,-TSL-and-SFSS-repayment-thresholds-and-rates/>
- Babbie, E. (2008). *The Basics of Social Research*. Belmont, CA: Thomson Higher Education.
- Baharudin, R., Hong, C. Y., Lim, S. J., & Zulfeily, N. S. (2010). Educational goals, parenting practices and adolescents' academic achievement. *Asian Social Science*, 6(12), 144-152.
- Bell, J. S., & Mitchell, R. (2000). Competency-based versus traditional cohort based technical education: a comparison of students' perceptions. 17(1). Retrieved from Journal of Career and Technical Education website: <https://scholar.lib.vt.edu/ejournals/JCTE/v17n1/pdf/bell.pdf>
- Benjamin, S. J., Marathamuthu, M. S., Muthaiyah, S., & Raman, M. (2011). Affordability of private tertiary education: a Malaysian study. *International Journal of Social Economics*, 38(4), 382-406.
- Berg, S. V. D. (2002). Education, poverty and inequality in South Africa. *Paper to the conference of the Centre for the Study of African Economies on Economic growth and poverty in Africa*. Retrieved from <http://www.csae.ox.ac.uk/conferences/2002-upagissa/papers/vanderberg-csae2002.pdf>
- Berg, S. V. D. (2008). *Poverty and education*. Paris: The International Institute for Educational Planning (IIEP) & The International Academy of Education (IAE).
- Bernard, H. R. (2006). Research methods in anthropology: qualitative and quantitative approaches Retrieved from <http://www.antropocaos.com.ar/Russel-Research-Method-in-Anthropology.pdf>
- Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university* (3rd ed.). Maidenhead, Berkshire, England: Open University Press/McGraw-Hill.

- Boliver, V. (2011). Expansion, differentiation, and the persistence of social class inequalities in British higher education. *Higher Education*, 61(3), 229-242.
- Bowden, M. P., & Doughney, J. (2010). Socio-economic status, cultural diversity and the aspirations of secondary students in the Western Suburbs of Melbourne, Australia. *Higher Education*, 59(1), 115-129.
- Bowers-Brown, T. (2006). Widening participation in higher education amongst students from disadvantaged socioeconomic groups. *Tertiary Education and Management*, 12(1), 59-74. doi: 10.1007/s11233-005-4073-4
- Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008). *Review of Australian Higher Education*. Canberra: Department of Education, Employment and Workplace Relations (DEEWR).
- Brinded, L. (2015). The 11 most expensive countries for a university education. Retrieved from <http://www.businessinsider.my/expert-market-data-11-countries-where-parents-spend-the-most-money-on-university-tuition-fees-2015-10/#7E5XoHgsre8p8UbG.97>
- Brown, M., Withers, E., Down, C., Figgi, J., & McManus, J. (2011). Pedagogical practices across the Tertiary sector: summarising the literature on the pedagogical support for students moving from VET into Universities AVETRA 14th Annual Conference: Research in VET: Janus- Reflecting Back, Projecting. Retrieved from <http://avetra.org.au/wp-content/uploads/2011/05/88.00.pdf>
- Bryant, B. K., Zvonkovic, A. M., & Reynolds, P. (2006). Parenting in relation to child and adolescent vocational development. *Journal of Vocational Behavior*, 69(2006), 149-175.
- Buchanan, J., Yu, S., Marginson, S., & Wheelahan, L. (2009). Putting the vocational back in VET. *The Australian TAFE Teacher*, 43(1, Winter), 8-11.
- Buletin Anjakan. (2015). Transformation of vocational education. *Development plan of education Malaysia 2013-2025*, 8(1). Retrieved from http://www.padu.edu.my/files/Buletin_Anjakan_Bil_8_18112015.pdf
- Burgess, T. (2001). A general introduction to the design of questionnaires for survey research Retrieved from <http://iss.leeds.ac.uk/downloads/top2.pdf>
- Byrnes, J., Paez, D., & Blacker, J. (2010). Transforming vision into reality: The integrated articulation and credit transfer project AVETRA conference – VET research: leading and responding in turbulent times Retrieved from <http://avetra.org.au/publications/conference-archives/conference-archives-2010/2010-papers>
- Cameron, R. (2009). A sequential mixed method model research design: Design analytical and display issues. 3(2). Retrieved from ePublications@SCU website: http://epubs.scu.edu.au/cgi/viewcontent.cgi?article=1069&context=comm_pubs
- Centre for the Studies of Higher Education (CSHE). (2008). Participation and equity-A review of the participation in higher education from low socioeconomic backgrounds and indigenous people Retrieved from <http://www.cshe.unimelb.edu.au/research/equity/docs/EquityReviewReport.pdf>
- Chamhuri, S., & Yusof, K. (1997). Urban development and urban poverty in Malaysia. *International Journal of Social Economics*, 24(12), 1524-1535.

- Chen, D. (2009). Vocational schooling, labour market outcomes and college entry (Publication no. 000158349-200). Retrieved 21 Dec 2012, from The World Bank http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/01/12/000158349_20090112092359/Rendered/PDF/WPS4814.pdf
- Chenard, P. (2010). Developing a culture of accessibility and success in post-secondary studies-Quebec's experience within Canada. In M. Cooper (Ed.), *From access to success-Closing the knowledge divide: Higher education for under-represented groups in the market economy* (pp. 95-107). London: European Access Network.
- Clough, P., & Nutbrown, C. (2008). *A student's guide to methodology* (2nd ed.). Los Angeles: SAGE.
- Cohen, L., & Manion, K. (1985). *Research methods in education* (2nd ed.). London: Croom Helm.
- Colclough, C., Rose, P., & Tembon, M. (2000). Gender inequalities in primary schooling: The roles of poverty and adverse cultural practice. *International Journal of Educational Development*, 20(1), 5-27.
- Coley, R. J., & Baker, B. (2013). *Poverty and education: Finding the way forward* Retrieved from https://www.ets.org/s/research/pdf/poverty_and_education_report.pdf
- Cornford, I. R. (2000). *The location of VET in schools: some important issues*. Paper presented at the 8th Annual International Conference on Post-compulsory Education and Training, Brisbane, Australia.
- Cornford, I. R. (2004). Competency-based training in Australia : a review from the perspectives of effective policy formation and implementation. *Australian Vocational Education Review*, 11(2), 1-10.
- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Thousand Oaks, CA: SAGE.
- Creswell, J. W. (2012). *Educational research: planning, conducting, and evaluating quantitative and qualitative research* (Fourth ed.). Boston: Pearson Education.
- Croll, P., Attwood, G., Fuller, C., & Last, K. (2008). The structure and implications of children's attitudes to school. *British Journal of Educational Studies*, 56(4), 382-399.
- Cuthill, M., & Schmidt, C. (2011). Widening participation: Challenges confronting a research-intensive university. 16(2), 13-25. Retrieved from <http://www.aair.org.au/articles/volume-16-no-2/16-2-widening-participation-challenges-confronting-a-research-intensive-university>
- Department of Skills Development. (2011a). *Bilangan pengeluaran sijil kemahiran Malaysia 1994-2011*. Retrieved 11 June 2013, from Department of Skills Development Malaysia <http://www.dsd.gov.my/index.php/ms/component/phocadownload/category/19?download=228>
- Department of Skills Development. (2011b). *Laporan tahunan 2011-Jabatan pembangunan kemahiran*. Putrajaya: Department of Skills Development Malaysia.
- Department of Statistics Malaysia. (2011a). *Labour force survey report Malaysia 2011* Retrieved from

- http://www.statistics.gov.my/portal/download_Labour/files/labour_force/Laporan_Penyiasatan_Tenaga_Buruh_Malaysia2011.pdf
- Department of Statistics Malaysia. (2011b). *Statistics of graduates in the labour force Malaysia*. Retrieved from http://www.statistics.gov.my/portal/download_Labour/files/BPTMS/PERANGKA_AN_%20SISWAZAH_2011.pdf
- Department of Statistics Malaysia. (2012). Findings of the household income survey (HIS) 2012. Retrieved 25 May 2013, from Department of Statistics Malaysia http://www.statistics.gov.my/portal/images/stories/files/LatestReleases/household/HIS_2012_Eng.pdf
- Department of Statistics Malaysia. (2015). *Report of household income and basic amenities survey 2014*.
https://www.statistics.gov.my/index.php?r=column/cthemByCat&cat=120&menu_id=amVoWU54UTl0a21NWmdhMjFMMWcyZz09&bul_id=aHhtTHVWNVYzTFBua2dSUIBRL1Rjdz09
- Devlin, M., & McKay, J. (2011). *Inclusive teaching and support of university students from low socioeconomic status backgrounds*. Retrieved from <http://lowses.edu.au/assets/lse-discussion-paper-devlin-mckay.pdf>
- Dye, J. F., Schatz, I. M., Rosenberg, B. A., & Colema, S. T. (2000). Constant comparison method: A Kaleidoscope of data. *The Qualitative Report*, 4(1), 1-10.
- E-Tawau. (2014). Higher education in Malaysia. from E-Tawau <http://www.etawau.com/edu/IndexUniversity.htm>
- Economic Planning Unit. (1965). *First Malaysia Plan 1966-1970*. Kuala Lumpur: The Government of Malaysia.
- Economic Planning Unit. (1991). *Second Outline Perspective Plan 1991-2000*. Putrajaya: Economic Planning Unit-Prime Minister's Department Malaysia.
- Economic Planning Unit. (1996). *Seventh Malaysia Plan 1996-2000*. Retrieved from <http://www.epu.gov.my/en/seventh-malaysia-plan-1996-2000>
- Economic Planning Unit. (2001). *Eighth Malaysia plan 2001-2005*. Putrajaya: The Government of Malaysia.
- Economic Planning Unit. (2004). *Malaysia: 30 years of poverty reduction, growth and racial harmony*. Retrieved from <http://info.worldbank.org/etools/docs/reducingpoverty/case/25/fullcase/Malaysia%20Full%20Case.pdf>
- Economic Planning Unit. (2006a). *Ninth Malaysia plan 2006-2010*. Putrajaya: The Government of Malaysia.
- Economic Planning Unit. (2006b). *Ninth Malaysia plan 2006-2010: Speech by the prime minister*. Putrajaya: The Government of Malaysia.
- Economic Planning Unit. (2006c). *Speech by Prime Minister on Ninth Malaysia Plan 2006-2010* (Publication no. RMK9). Retrieved 2 Jan 2013 http://www.parlimen.gov.my/news/eng-ucapan_rmk9.pdf
- Economic Planning Unit. (2009). *Transforming technical and vocational education and training to meet industry demand*. In Economic Planning Unit (Ed.), *Tenth Malaysia Plan: 2011-2015*. Putrajaya: Prime Minister's Department. Retrieved from <http://rmk11.epu.gov.my/pdf/strategy-paper/Strategy%20Paper%2009.pdf>.

- Economic Planning Unit. (2010a). *1-Malaysia Government Transformation Programme: annual report 2010*. Kuala Lumpur: Jabatan Perdana Menteri.
- Economic Planning Unit. (2010b). *Government Transformation Programme: Annual Report 2010*. Kuala Lumpur: Prime Minister's Department Malaysia.
- Economic Planning Unit. (2010c). *Tenth Malaysia Plan 2011-2015*. Putrajaya: The Economic Planning Unit: Prime Minister's Department Malaysia.
- Economic Planning Unit. (2012). *Economic transformation programme: Annual report 2012*. Putrajaya: Prime Minister's Department Malaysia.
- Economic Planning Unit. (2013a). Incidence of hardcore poverty by ethnicity, strata and state, Malaysia, 1984-2012. Retrieved 3 Apr 2015
<http://www.epu.gov.my/documents/10124/ea7c59c2-3eb8-453e-8f11-0627d71200b8>
- Economic Planning Unit. (2013b). Mean Monthly Gross Household Income of Top 20%, Middle 40% and Bottom 40% of Households by Ethnicity and Strata, Malaysia, 1970-2012. Retrieved 12 October 2013, from Economic Plannign Unit
<http://www.epu.gov.my/documents/10124/37cd593e-916c-4938-865f-d727201cbd05>
- Economic Planning Unit. (2015a). *Eleventh Malaysia plan 2016-2020*. Putrajaya: Prime Minister's Office, Malaysia.
- Economic Planning Unit. (2015b). *Mean Monthly Gross Household Income by Ethnic Group, Strata and State, Malaysia (1970-2014)*.
<http://www.epu.gov.my/documents/10124/f34c4fb1-cbf4-4390-a497-9833f3e2225d>
- Education Act 1996, ACT 550, The Commissioner of Law Revision Malaysia, , Pub. L. No. 10, b Stat. d (2006 h).
- Education for All (EFA). (2015). Education for all 2000-2015: Achievements and challenges Retrieved from
<http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>
- Education for All (EFA) Global Monitoring Report team. (2011). The hidden crisis: armed conflict and education Retrieved from
<http://unesdoc.unesco.org/images/0019/001907/190743e.pdf>
- Elm, B. V., & Hirschman, C. (1979). Age at first marriage in Peninsular Malaysia. *Journal of Marriage and The Family*, 41(November), 877-891.
- Emat, H. Y. (1993). Challenges and strategies of technical and vocational education towards achieving Vision 2020. *Education Journal*, 37(8). Retrieved from
<http://aede.tripod.com/Vok.htm>
- European Commission. (2010). *Focus on higher education in Europe 2010: The impact of the Bologna process*. Brussels: Education, Audiovisual and Culture Executive Agency (EACEA P9 Eurydice).
- European Commission. (2015). *National student fee and support systems in European higher education - 2015-2016*. Luxembourg: Publications Office of the European Union.
- Ewer, P., & Ablett, D. (1996). Competency based training: has it all gone wrong? In C. Selby-Smith & F. Perrier (Eds.), *The economic impact of vocational education and training*. Canberra: AGPS.

- Fok, H. T. (1994). *The development of technical and vocational education in Malaysia: A case study in quality improvement*. Melbourne, Australia: RMIT for UNESCO.
- Forsyth, A., & Furlong, A. (2000). *Socioeconomic disadvantage and access to higher education*. Bristol: The Policy Press.
- Forsyth, A., & Furlong, A. (2003). Losing out? Socioeconomic disadvantage and experience in further and higher education Retrieved from <http://www.jrf.org.uk/sites/files/jrf/jr139-socioeconomic-disadvantage-education.pdf>
- Gerik Vocational College. (2016). Diploma in Accounting. <http://www.kvgerik.com/p/diploma-perakaunan.html>
- Hahs-Vaughn, D. (2004). The impact of parents' education level on college students: An analysis using the beginning postsecondary students longitudinal study. *Journal of College Student Development*, 45(5), 483-500.
- Harris, R., Rainey, L., & Sumner, R. (2006). Crazy paving or stepping stones? Learning pathways within and between vocational education and training and higher education Retrieved from <http://files.eric.ed.gov/fulltext/ED495911.pdf>
- Hashim, R. (2007). Education liberalisation and its challenges in Islamic education context in Malaysia (Liberalisasi pendidikan dan cabarannya dalam konteks pendidikan islam di Malaysia). [Liberalisasi pendidikan dan cabarannya dalam konteks pendidikan islam di Malaysia]. *Jurnal Pendidikan Islam*, 12(2), 19-40.
- Hashim, S. M. (1988). *Income inequality and poverty in Malaysia*. Boston: Rowman & Littlefield Publishers, Inc.
- Hassan, C. H. (2011). Poverty in Malay state in Malaysia: A socio-demographic study (Publication no. 1867885). Retrieved 3 Jan 2013, from Social Science Research Network <http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan050010.pdf>
- Hee, T. F. (1994). The development of technical and vocational education in Malaysia: A case study in quality improvement. *Case studies on technical and vocational education in Asia and the Pacific*. Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED391029&ERICExtSearch_SearchType_0=no&acno=ED391029
- Hong, K.-S., & Songan, P. (2011). ICT in the changing landscape of higher education in Southeast Asia. *Australasian Journal of Educational Technology*, 27(8), 1276-1290.
- Hooi, N. B., & Kala, N. S. (2008). The race to end poverty. Retrieved from <http://www.thenutgraph.com/the-race-to-end-poverty/>
- Hoy, W. K. (2010). *Quantitative research in education: A primer*. Los Angeles: SAGE.
- Hsieh, C.-E. (2004). Strengths and weaknesses of qualitative case study research. *Survey Research-Method and Application*, 1(15), 87-116.
- Hyland, T. (2014). Reconstructing vocational education and training for the 21st century: Mindfulness, craft and values. *SAGE Open*, 4(1), 1-15.
- Indexmundi. (2016). Malaysia literacy Retrieved from <http://www.indexmundi.com/malaysia/literacy.html>

- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3-20.
- James, R. (2002). Socioeconomic background and higher education participation: An analysis of school students' aspirations and expectations. Retrieved from http://www.cshe.unimelb.edu.au/research/equity/docs/eip02_5.pdf
- James, R., Bexley, E., Anderson, A., Devlin, M., Garnett, R., Marginson, S., & Maxwell, L. (2008). Participation and equity : a review of the participation in higher education of people from low socioeconomic backgrounds and Indigenous people Retrieved from <http://dro.deakin.edu.au/eserv/DU:30006777/devlin-participationandequity-2008.pdf>
- James, R., McInnis, C., & Devlin, M. (2002). Assessing learning in Australian universities: Ideas, strategies and resources for quality in student assessment Retrieved from <http://www.cshe.unimelb.edu.au/assessinglearning/docs/AssessingLearning.pdf>
- James, R., Wyn, J., Gabrielle Baldwin, Hepworth, G., McInnis, C., & Stephanou, A. (1999). Rural and isolated school students and their higher education choices: A re-examination of student location, socio-economic background, and educational advantage and disadvantage Retrieved from <http://www.voced.edu.au/content/ngv%3A42256>
- Jordan, W. J., & Plank, S. B. (2000). Sources of talent loss among high-achieving poor students. In M. G. Sanders (Ed.), *Schooling students placed at risk: Research, policy and practice in the education of poor and minority adolescents* (pp. 83–108). Mahwah, NJ: Lawrence Erlbaum.
- Kamaruddin, K., & Jusoh, O. (2008). Educational policy and opportunities of orang asli: A study on indigenous people in Malaysia. *The Journal of Human Resource and Adult Learning*, 4(1), 86-97.
- Kandar, A. L. (2014). Employability skills among students in vocational college Kluang Johor Retrieved from http://eprints.uthm.edu.my/7062/1/AHMAD_LUTHFI_BIN_KANDAR_24.pdf
- Kaos, J. J. (10 Oct 2011). PM: Priority to nurture talent, Nation news, *The STAR*. Retrieved from <http://thestar.com.my/news/story.asp?file=/2011/9/10/nation/9465633&sec=nation>
- Kementerian Pengajian Tinggi. (2010). *Dasar Pembangunan Keusahawan Institusi Pengajian Tinggi*. Kuala Lumpur: Ministry of Higher education, Malaysia.
- Kirk, C. M., Lewis, R. K., Scott, A., Wren, D., Nilsen, C., & Colvin, D. Q. (2012). Exploring the educational aspirations–expectations gap in eighth grade students: Implications for educational interventions and school reform. *Educational Studies*, 38(5), 507-519.
- Laforest, J. (2009). Guide to organizing semi-structured interviews with key informant: Safety diagnosis tool kit for local communities Vol. 11. Retrieved from http://www.sswm.info/sites/default/files/reference_attachments/LAFOREST%20009%20Guide%20to%20Organizing%20Semi%20Structured%20Interviews.pdf
- Lambert, M. (2012). *A beginner's guide to doing your education research project*. Los Angeles: SAGE.

- Lee, M. N. N. (2015). Higher education in Malaysia: National strategies and innovative practices. In C. S. Jung, G. A. Postiglione & F. Huang (Eds.), *Mass higher education deveopment in East Asia: knwoledge studies in higher education* (pp. 105-118). Switzerland: Springer International Publishing.
- Leong, P. C. (2010). A historical account of skills training in Malaysia. Retrieved 10 September 2011, from Ministry of Human Resources, Malaysia
www.mohr.gov.my/pdf/pangchau.pdf
- Leung, W.-C. (2001). How to design a questionnaire. 9, 187-189. Retrieved from http://mail.cochrane.es/files/Recursos/How_to_design_a_questionnaire.pdf
- Lievana, C. M. (2010). The relationship between industry and universities. *Cuadernos de Estudios Empresariales*, 20(1), 81-105.
- Lindsay, T. (2015). Sorry, but 'college is too expensive' is not a 'myth'. Retrieved from <http://www.forbes.com/sites/tomlindsay/2015/07/19/sorry-but-college-is-too-expensive-is-not-a-myth/#3b4127d7453d>
- Lisle, J. D. (2011). The benefits and challenges of mixing methods and methodologies: lessons learnt implementing qualitative led mixed methods research designs in Trinidad and Tobago. *Caribbean Curriculum*, 18(1), 87-120.
- Long, B. T. (2014). Proposal 6: Addressing the academic barriers to higher education. In M. S. Kearney & B. H. Harris (Eds.), *The Hamilton project: policies to address poverty in America* (pp. 67-76). Washington DC: Brookings. Retrieved from [http://www.hamiltonproject.org/files/downloads_and_links/policies_address pove_rty_in_america_full_book.pdf](http://www.hamiltonproject.org/files/downloads_and_links/policies_address_pove_rty_in_america_full_book.pdf).
- Lopez, R., Thomas, V., & Wang, Y. (1999). The distribution of education and economic reforms. Retrieved from <http://elibrary.worldbank.org/content/workingpaper/10.1596/1813-9450-2031>
doi:10.1596/1813-9450-2031
- Majid, M. R., Jaffar, A. R., Man, N. C., Vaziri, M., & Sulemana, M. (2016). Mapping poverty hot spots in Peninsular Malaysia using spatial autocorrelation analysis. *Journal of the Malaysian Institute of Planners*, 1-16. Retrieved from [https://www.researchgate.net/profile/Mehrdad_Vaziri/publication/305506059 Ma_pping_poverty_hot_spots_in_Peninsular_Malaysia_using_spatial_autocorrelation_analysis/links/57943d4608aed51475c72491/Mapping-poverty-hot-spots-in-Peninsular-Malaysia-using-spatial-autocorrelation-analysis.pdf](https://www.researchgate.net/profile/Mehrdad_Vaziri/publication/305506059_Ma_pping_poverty_hot_spots_in_Peninsular_Malaysia_using_spatial_autocorrelation_analysis/links/57943d4608aed51475c72491/Mapping-poverty-hot-spots-in-Peninsular-Malaysia-using-spatial-autocorrelation-analysis.pdf)
- Majlis Amanah Rakyat. (2016). Education financing Retrieved from <http://www.mara.gov.my/en/pembiayaan-pelajaran>
- Majlis Amanah Rakyat (MARA). (2013). *Annual Report 2013*. Kuala Lumpur: Majlis Amanah Rakyat.
- Malaysian Technical University Network (MTUN). (2015). History and establismnt of MTUN Retrieved from <http://mtun.uthm.edu.my/en/about-us.html>
- Marwan, A., Sumintono, B., & Mislan, N. (2012). Revitalising rural school: A challenge for Malaysia *Educational Issues, Research and Policies* Retrieved from http://eprints.utm.my/27806/1/Book%20Chapter_Rural%20school.pdf
- Maschinot, B. (2008). *The changing face of the United States: The influence of culture on early child development* Retrieved from http://main.zerotothree.org/site/DocServer/Culture_book.pdf?docID=6921

- Masron, T., Yaakub, U., & Masami, F. (2013). Orang Asli in Peninsular Malaysia: population, spatial distribution and socioeconomic condition. *Journal of Ritsumeikan Social Science and Humanities*, 6(Special Issue), 75-115.
- Middleton, J. (1988). *Changing patterns in vocational education*. Retrieved from <http://documents.worldbank.org/curated/en/1988/07/437264/changing-patterns-vocational-education>
- Mieschbuehler, R., & Dexter, B. (2010). Engaging the hearts and minds: An alternative approach to ethnic inequalities in higher education. In M. Cooper (Ed.), *From access to success-Closing the knowledge divide* (pp. 107-116). London: European Access Network.
- Ministry of Education. (2011). Strategic Plan: transformation of vocational education Retrieved from http://www.bptv.edu.my/v4/images/bahanpdf/pelanstrategiktpv/PelanStrategikTransformasiPendidikanVokasional_1.pdf
- Ministry of Education. (2012a). *Concept of vocational college (Konsep kolej vokasional)*. Putrajaya: Ministry of Education Malaysia-Division of Technical and Vocational Education
- Ministry of Education. (2012b). *Interim strategic plan 2011-2020* (1st ed.). Putrajaya: Ministry of Education Malaysia.
- Ministry of Education. (2012c). *Malaysia education blueprint 2013-2025*. Putrajaya: The Ministry of Education Malaysia.
- Ministry of Education. (2012d). *Organization chart of Ministry of Education Malaysia*. Kuala Lumpur: Ministry of Education Retrieved from <http://www.moe.gov.my/userfiles/file/attachment/carta%20organisasi%20KPM%20BINEW.pdf>.
- Ministry of Education. (2012e). *Perlaksanaan program pendidikan asas vokasional (PAV) pada tahun 2013 (Implementation of basic vocational education (PAV) in year 2013)*. Putrajaya: Ministry of Education Malaysia Retrieved from <http://www.bptv.edu.my/v3/index.php/muat-turun-bahan/category/4-pembangunan-ptv>.
- Ministry of Education. (2012f). Technical and vocational education. <http://www.moe.gov.my/my/teknik-vokasional>
- Ministry of Education. (2014a). Entry requirements to public higher education institutions Malaysia. Retrieved 22 Sept 2014 <http://upu.moe.gov.my/web/>
- Ministry of Education. (2014b). Malaysia Education Blueprint Annual Report 2013 Retrieved from http://www.moe.gov.my/cms/upload_files/files/PADU%20AR%202013%20ENG.pdf
- Ministry of Education. (2014c). Transformation of vocational education Retrieved from <http://www.geocities.ws/jppkvshas/PROGRAM%20KOLEJ%20VOKASIONAL%20KPM%20ed%201.pdf>
- Ministry of Education. (2015). Executive summary: Malaysia education blueprint 2015-2025 (higher education) Retrieved from

- <http://hes.mohe.gov.my/event/docs/4.%20Executive%20Summary%20PPPM%202015-2025.pdf>
- Ministry of Higher Education. (2007). National higher education action plan 2007-2010: Triggering higher education transformation. Retrieved from <http://planipolis.iiep.unesco.org/upload/Malaysia/Malaysia%20Higher%20education%20action%20plan%202007-2010.pdf>
- Ministry of Higher Education. (2010). *Perangkaan Pengajian Tinggi Malaysia (Statistics of Higher Education of Malaysia)*. Kuala Lumpur: Ministry of Higher Education.
- Ministry of Higher Education. (2011a). Blueprint on enculturation of lifelong learning Malaysia 2011-2020 Retrieved from <http://www.mohe.gov.my/portal/images/utama/penerbitan/Enculturation%20of%20Lifelong%20LearningFINAL%20v1.pdf>
- Ministry of Higher Education. (2011b). Graduate tracer study 2010 Vol. 1. Retrieved from <http://www.mohe.gov.my/portal/en/penerbitan-kpt-selanjutnya/988-laporan-kajian-pengesanan-graduan-2010.html>
- Ministry of Higher Education. (2011c). Statistics of higher education of Malaysia 2010 Retrieved from http://www.mohe.gov.my/web_statistik/perangkaan_2010.pdf
- Ministry of Higher Education. (2012). *The national graduate employability blueprint 2012-2017*. Putrajaya: Ministry of Higher Education Malaysia.
- Mohamad, M. M., Razali, C. M. C., & Jalil, S. A. (2009). The need of lifelong learning for instructors in vocational training institutions. Retrieved from University of Tun Hussein Onn Malaysia website: <http://eprints.uthm.edu.my/319/1/mimi.ICTLHE.pdf>
- Mohamad, M. M., Saud, M. S., & Ahmad, A. (2009). The need in training and retraining for TVET teachers in Malaysia. *Journal of Technical Education and Training*, 1(1), 51-57.
- Mohamed, Z., & Said, R. (2012, 16 March 2013). *Disparity in education: Evidence from Malaysia*. Paper presented at the International Conference on Business and Economic Research (ICBER), Bandung, Indonesia.
- Moodie, G. (2003). VET-higher education transfer and the structure of tertiary education. Retrieved from http://www.avetra.org.au/abstracts_and_papers_2003/Moodie.pdf
- MTUN. (2015). Malaysian Technical University Network Retrieved from <https://mtun.uthm.edu.my/en/>
- Muijs, D. (2007). *Improving failing schools: towards a research based model*. Paper presented at the 20th Annual World ICSEI Conference: Professional challenges for school effectiveness and improvement in the era of accountability, Portoroz. <http://www.fm-kp.si/zalozba/ISBN/978-961-6573-65-8/077-090.pdf>
- Mustapha, R. (1999). *The role of vocational and technical education in the industrialization of Malaysia*. Paper presented at the International Vocational Education and Training Association Annual Conference, Sydney, Australia.
- Mustapha, R. B., & Greenman, J. P. (2002). The role of vocational education in economic development in Malaysia: Educators' and employers' perspectives.

- Journal of Industrial Teacher Education*, 39(2). Retrieved from <http://scholar.lib.vt.edu/ejournals/JITE/v39n2/mustapha.html>
- Nair, S., & Sagar, S. (2015). Poverty in Malaysia: need for a paradigm shift. *Institution and Economies*, 7(3), 95-123.
- Nicholas, C. (2006). The state of Orang Asli education and its root problems. Retrieved from Human Rights Commission of Malaysia (SUHAKAM) website: <http://www.coac.org.my/codenavia/portals/coacv2/images/articles/OA%20Education.pdf>
- Nor, S. M., Roslan, S., Mohamed, A., Hassan, K. H. A., Ali, M. A. M., & Manaf, J. A. (2011). Dropout prevention initiatives for Malaysian indigenous Orang Asli children. *The International Journal on School Disaffection*, 8(1), 42-56.
- NSW Department of Education and Training. (2006). NSW school based apprenticeships. November(1). Retrieved from <http://www.sbatinnsw.info/newsletter-1.pdf>
- O'Shea, H., Onsmann, A., & McKay, J. (2010). Students from low socioeconomic status backgrounds in higher education: An annotated bibliography 2000-2011 Retrieved from <http://www.lowses.edu.au/assets/LSES-Annotated-Bibliography.pdf>
- Olausson, L. (2010). Widening participation and the changing role of higher education in a globalised world. In M. Cooper (Ed.), *From Access to Success: Closing the knowledge divide* (pp. 27-34). London, UK: The European Access Network.
- Ontario Undergraduate Student Alliance (OUSA), College Student Alliance (CSA), & Ontario Student Trustees' Association (OSTA). (2011). *Breaking barriers: A strategy for equal access to higher education*. Toronto: Ontario Undergraduate Student Alliance.
- Osborne, J. W. (2015). What is rotating in exploratory factor analysis. *Practical Assessment, Research & Evaluation*, 20(2). Retrieved from <http://pareonline.net/getvn.asp?v=20&n=2>
- Otto, L. B. (2000). Youth perspectives on parental career influence. *Journal of Career Development*, 27(2), 111-118.
- Overman, H. G. (2002). Neighbourhood effects in large and small neighbourhoods. *Urban Studies*, 39(1), 117-130.
- Paez, D., Byrnes, J., Blacker, J., Jackson, A., & Dwyer, C. (2011). *The corporate strategy approach to articulation and credit transfer*. Queensland: University of Southern Queensland.
- Pang, C. L. (2010). A historical account of skills training in Malaysia. Retrieved from Ministry of Human Resources website: www.mohr.gov.my/pdf/pangchau.pdf
- Pang, C. L., Narunan, R., & Sim, S. (2011). Background paper for Malaysia: Skills development in the workplace in Malaysia (Publication no. 120569). Retrieved 20 Dec 2012, from ILO (International Labour Organization) http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/meetingdocument/wcms_120569.pdf
- Park, H. S., Dailey, R., & Lemus, S. (2002). The use of exploratory factor analysis and principal components analysis in communication research. *Human Communication Research*, 28(4), 562-577.

- Pearce, A., Murphy, H., & Conroy, P. (2000). Smoother pathways from TAFE to higher education. *Flexible Learning for a Flexible Society, Proceedings of ASET- 2000 Conference, Toowoomba, QLD, 2-5 July 2000*, 536-544.
- Peng, T. N. (2002). Social, economic and ethnic fertility differentials in Peninsular Malaysia. Retrieved from <http://archive.iussp.org/Bangkok2002/S03Peng.pdf>
- Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN). (1997). Perbadanan tabung pendidikan tinggi Malaysia (National higher education fund corporation). Retrieved 2 March 2013 <http://www.ptptn.gov.my/web/english/loans>
- Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN). (2016). Conditions and method of approval for exemption of PTPTN education financing repayment. <http://www.ptptn.gov.my/web/english/repayment-exemption>
- Performance Management and Delivery Unit. (2010). Economic transformation programme - Executive summary Retrieved from http://www.kpkk.gov.my/pdf/tahukah_anda/ETP_bi/executive%20summary.pdf
- Performance Management and Delivery Unit (Producer). (2013). PTPTN remains committed to help needy students regardless of race. Retrieved from http://www.pemandu.gov.my/gtp/Media_Coverage-@-PTPTN_remains_committed_to_help_needy_students_regardless_of_race.aspx
- Pi, T. (2011). Oil-rich Terengganu the poorest, not Sabah. Retrieved from <http://www.freemalaysiatoday.com/category/nation/2011/03/29/oil-producing-terengganu-the-poorest-not-sabah/>
- Plowman, I. (2006). The four determinants of behaviour. *Stream 2*. Retrieved from The Regional Institute Online Publishing website: http://www.regional.org.au/au/apen/2006/refereed/2/3876_plowmani.htm
- Poo, B. T., Ismail, R., Othman, N., & Sulaiman, N. (2012). Globalization and the factors influencing households' demand for higher education in Malaysia. *International Journal of Education and Information Technologies*, 6(3), 269-278.
- Queensland Curriculum and Assessment Authority. (2016). Student connect magazine. Retrieved from Queensland Government website: <https://www.qcaa.qld.edu.au/publications/newsletters-magazines/student-connect-magazine>
- Ramasamy, N., & Rowley, C. (2005). Workforce development and skill formation in Malaysia: pushing for knowledge based economy? In J. Benson, H. Gospel & Y. Zhu (Eds.), *Workforce development and skill formation in Asia* (pp. 210-237). New York: Routledge.
- Ramli, N., Zainol, Z. A., Aziz, J. A., Ali, H. M., Hassim, J., Hirwani, W. M., . . . Yaakob, N. I. (2013). The concept of research university: the implementation in the context of Malaysian University System. *Asian Social Science*, 9(5), 307-317.
- Rashid, M., & Nasie, M. (2003). *Lifelong learning in Malaysia*. Paper presented at the International Policy Seminar (24-26 June 2003), Seoul, Korea.
- Rasul, M. S., Ashari, Z. H. M., Azman, N., & Rauf, R. A. A. (2015). Transforming TVET in Malaysia: harmonizing the governance structure in a multiple stakeholder setting. *January 2015*(4). Retrieved from The Online Journal for Technical and Vocational Education and Training in Asia website: <http://www.tvet-online.asia/issue/4/rasul-et-al>

- Razaq, A., & Abidin, N. Z. (2007). The evaluation of non-formal programmes in rural areas: Implications on adult education in Malaysia. *Journal of International Management Studies*, August(1), 14-21.
- Razzaly, W., Kaprawi, N., & Spahat, G. (2010). *The development of competency of vocational teachers in Malaysia: Curriculum development perspective*. Paper presented at the 1st UPI International Conference on Technical and Vocational Education and Training, Bnadung, Indonesia.
- Roksa, J. (2011). Differentiation and work: inequality in degree attainment in U.S. higher education *Higher Education*, 61(3), 293-308.
- Rosa, M. L. D. L., & Tierney, W. G. (2009). Breaking through the barriers to college: empowering low-income communities, schools, and families for college opportunity and studnet financial aid Retrieved from http://www.usc.edu/dept/chepa/pdf/Breaking_through_Barriers_final.pdf
- Rosman, R. N., & Hamzah, R. (2012). Building holistic individual through technical & vocational education and training (TVET) for human capital development. Retrieved from http://www.academia.edu/1137340/Building_holistic_individual_through_Technical_and_Vocational_Education_and_Training_TVET_for_human_capital_development
- Sabates, R., Akyeampong, K., Westbrook, J., & Hunt, F. (2010). School drop out: Patterns, causes, changes and policies. Retrieved from UNESCO website: <http://unesdoc.unesco.org/images/0019/001907/190771e.pdf>
- Schindler, S., & Reimer, D. (2011). Differentiation and social selectivity in German higher education. *Higher Education*, 61(3), 261-275. doi: 10.1007/s10734-010-9376-9
- Scholarship America. (2013). Three hot scholarhsip trends to watch for in 2014. from US News <http://www.usnews.com/education/blogs/the-scholarship-coach/2013/11/07/3-hot-scholarship-trends-to-watch-for-in-2014>
- Shah, A. (2013). Poverty facts and stats. from Global Issues <http://www.globalissues.org/article/26/poverty-facts-and-stats>
- Shariffuddin, M. A. M., Nor, N. M., Lim, N. L. Z., Rahamat, S. A. S., Bakri, S. N. A. A., & Abdullah, M. N. (2014). Education level amongst natives in Malaysia. *Journal of Education and Practice* 5(32), 66-70.
- Sherron, G. T., & Boettcher, J. V. (1997). Distance learning: The shift to interactivity. Retrieved from CAUSE website: <http://net.educause.edu/ir/library/pdf/pub3017.pdf>
- Siwar, C., Ahmed, F., Bashawir, A., & Mia, M. S. (2016). Urbanization and urban poverty in Malaysia: Consequences and vulnerability. *Journal of Applied Science*, 16(1), 154-160.
- Sousal, V. D., Driessnackll, M., & Mendes, I. A. C. (2007). An overview of research designs relevant to nursing: Part 1-quantitative research designs. 15(3), 502-507. Retrieved from http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692007000300022

- Stewart, E. B., Stewart, E. A., & Simons, R. L. (2007). The effect of neighborhood context on the college aspirations of African American adolescents. *American Educational Research Journal*, 44(4), 896-919.
- StudyMalaysia.com. (2015). Education guide Malaysia. from Challenge Concept (M) Sdn. Bhd. <https://www.studymalaysia.com/education/higher-education-in-malaysia/scholarships-study-loans-for-higher-education>
- Sulaiman, N., Ismail, R., Othman, N., & Poo, B. T. (2012). The determinants of demand for education among households in Malaysia. *Medwell Journals-International Business Management*, 6(5), 558-567. doi: 10.3923/ibm.2012.558.567
- Sunway University. (2016). Jeffrey Cheah foundation scholarship. <https://university.sunway.edu.my/Jeffrey-Cheah-Foundation-Scholarship>
- Suradin, A., Salehuddin, M. N., Mustafa, M. Z., Abd-Razzaq, A. R., Madar, A. R., & Ab-Hadi, M. Y. (2010). Parents perception towards vocational education (Persepsi ibubapa terhadap pendidikan vokasional). 197-202. Retrieved from UTHM Institutional Repository website: <http://eprints.uthm.edu.my/3201/1/95.pdf> doi:3201/1/95
- Suruhanjaya Hak Asasi Manusia Malaysia. (2010). Report on access to education in Malaysia. Retrieved from Human Rights Commission of Malaysia website: http://www.suhakam.org.my/c/document_library/get_file?p_1_id=10408&folderId=260721&name=DLFE-7901.pdf
- TAFE Directors Australia. (2014). TAFE students will be locked out if higher education reforms continue to be blocked Retrieved from http://www.tda.edu.au/cb_pages/files/Higher%20education%20reforms%203%20December%202014.pdf
- Tamuri, A. H., Mahmud, Z., & Bari, S. (2005). Permasalahan Pelajar-pelajar fakir miskin di daerah Sabak Bernam (The difficulties of financially disadvantaged students in Sabak Bernam district). *Jurnal Pendidikan*, 30(2005), 21-33.
- Taylor's University. (2016). Scholarships and financial aid: undergraduate studies. <http://university.taylors.edu.my/admissions-aid/scholarships-financial-aid/undergraduate-studies>
- Terenzini, P. T., Cabrera, A. F., & Berna, E. M. (2001). Swimming against the tide: The poor in American higher education Retrieved from <https://research.collegeboard.org/sites/default/files/publications/2012/7/researchreport-2001-1-swimming-against-tide-the-poor-american-higher-education.pdf>
- Tham, S. Y. (2010). *Exploring access and equity in Malaysia's private higher education*. Paper presented at the Regulatory reforms and liberalization in services: Examining impacts on inclusive and sustainable development, Bali. http://www.unescap.org/tid/artnet/mtg/reformservice_bp8.pdf
- The World Bank. (2010). Malaysia economic monitor: Inclusive growth (Publication no. 324392-1288897994959). Retrieved 14 Dec 2012, from The World Bank http://siteresources.worldbank.org/INTMALAYSIA/Resources/324392-1288897994959/mem_nov2010_fullreport.pdf
- The World Bank. (2012a). Doing Business 2012. *Doing business in a more transparent world*. Retrieved from The World Bank website:

- <http://doingbusiness.org/~media/fpdfkm/doing%20business/documents/profiles/country/MYS.pdf>
- The World Bank. (2012b). Global economic prospects. Retrieved from The World Bank website: http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1322593305595/8287139-1339427993716/GEPJune2012_Full_Report.pdf
- The World Bank. (2012c). Higher education for growth through skills and research. Retrieved from The World Bank website: http://siteresources.worldbank.org/EASTASIAPACIFICEXT/Resources/226300-1279680449418/7267211-1318449387306/EAP_higher_education_chapter1.pdf
- The World Bank. (2012d). Strengthening education quality in East Asia. Retrieved from The World Bank website: http://siteresources.worldbank.org/EDUCATION/Resources/SABER_East_Asia_Report_Dec2011.pdf
- Trading Economics. (2012). Malaysia GDP. from Trading Economics <http://www.tradingeconomics.com/malaysia/gdp>
- Trading Economics. (2016). Malaysia GDP. Retrieved from Trading Economics website: <http://www.tradingeconomics.com/malaysia/gdp/forecast>
- UNESCO Institute for Statistics. (2014). Higher education in Asia: expanding out, expanding up *The rise of graduate education and university research* Retrieved from <http://www.uis.unesco.org/Library/Documents/higher-education-asia-graduate-university-research-2014-en.pdf>
- UNESCO Institute for Statistics (UIS). (2015). Fixing the broken promise of education for all: Finding from the global initiative on out-of-school children Retrieved from <http://www.uis.unesco.org/Education/Documents/oosci-global-exsum-en.pdf> doi: <http://dx.doi.org/10.15220/978-92-9189-162-7-en>
- UNICEF. (2014). All children in school by 2015: global initiative on out-of-school children Retrieved from <http://www.uis.unesco.org/Library/Documents/out-of-school-children-south-asia-study-2014-en.pdf>
- Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing and Practice*, 6(5), 100-110.
- Vanderslice, L. (2014). Harmful economic systems as a cause of hunger and poverty. Retrieved from World Hunger Education Service Associates website: <http://worldhunger.org/harmfuleconomicsystems.htm>
- Vedan, A., Flanagan, T., & Pérez, G. G. (2010). UBC Okanagan's Aboriginal access studies program: Opening doors to student and institutional success. In M. Cooper (Ed.), *From access to success-Closing the knowledge divide* (pp. 85-93). London: European Access Network.
- Wachira, S. K. (2015). Re-evaluating the procedural issues of the sequential explanatory design: a mixed method design. *General Education Journal*, 4(2), 68-75.
- Wee, V. (2001). K-Economy: Basis for Malaysia's economic transformation. *The National Vision Policy-The Eight Malaysia Plan and Privatization*. Retrieved from http://www.epu.gov.my/c/document_library/get_file?uuid=de2421d9-8728-44c6-b792-0aa8a879c73e&groupId=283545

- Welsh, E. (2002). Dealing with data: Using NVivo in the qualitative data analysis process. 3(2). Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/865/1880&q=nvivo+manual&sa=x&ei=zah_t5pqoyubhqfe9swgbq&ved=0cc4qfjai
- Wheelahan, L. (2009). *What kind of access does VET provide to higher education for low SES students? Not a lot.* Paper presented at the "Student equity in higher education: what we know. What we need to know". National Centre for Student Equity in Higher Education Launch & Forum, South Australia. h
- Wheelahan, L. (2013). The race to the bottom in the VET market & why TAFE cannot win: IPART Review – Pricing VET under Smart and Skilled. Retrieved from [http://www.ipart.nsw.gov.au/Home/Industries/Other/Reviews/Vocational Education/Pricing VET under Smart and Skilled](http://www.ipart.nsw.gov.au/Home/Industries/Other/Reviews/Vocational_Education/Pricing_VET_under_Smart_and_Skilled)
- Williams, M., & Bateman, A. (2003). Graded assessment in vocational education and training : An analysis of national practice, drivers and areas for policy development. Retrieved from <https://ncver.edu.au/publications/publications/all-publications/graded-assessment-in-vocational-education-and-training-an-analysis-of-national-practice,-drivers-and-areas-for-policy-development>
- Winston, G., & Zimmerman, D. (2004). College choices: The economics of where to go, when to go, and how to pay for it. Retrieved from National Bureau of Economic Research website: <http://www.nber.org/chapters/c10105.pdf>
- World Economic Forum. (2011). *The global competitiveness report 2011-2012* K. Schwab (Ed.) Retrieved from http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf
- Yin, R. K. (2003). *Case study research: design and methods* (5th ed.). London: SAGE Publications.
- Zainal, N. R., Kamaruddin, R., & Nathan, S. B. S. (2009). Socioeconomic status and parental savings for higher education among Malaysian Bumiputera families. *International Journal of Economics and Finance*, 1(2), 170-174.
- Zainal, N. R., Kaur, G., Ahmad, N. A., & Khalili, J. M. (2012). Housing conditions and quality of life of the urban poor in Malaysia. *Procedia-Social and Behavioural Sciences*, 50(1), 827-838. doi: 10.1016/j.sbspro.2012.08.085

Appendixes

Appendix 1 Questionnaires for VET-LSEG Students

Questionnaires

Phase 1 Category B: Vocational Students from Vocational Colleges

The objective of this survey is to seek understanding about the Vocational Education and Training (VET) students and to examine why VET graduates are not progressing to higher education after completing their vocational course. **All replies will be strictly confidential and you will not be identified in any way.**

Please tick (✓) the appropriate box and write comments where indicated.

I. Background or profile of students at Vocational College: This section evaluates the family background and profile of vocational students currently studying at Vocational College.

1. How many siblings do you have in your family?

☐ I am the only child (1) ☐ Two (2) ☐ Three (4) ☐ Four (4) ☐ Five (5) or more

2. How many members in your family (including your father and mother) had obtained an university qualification in the past?

☐ None ☐ One (1) ☐ Two (2) ☐ Three (3) ☐ Four (4) ☐ Five (5) or more

3. How many members in your family are currently studying in university or other colleges?

☐ None ☐ One (1) ☐ Two (2) ☐ Three (3) ☐ Four (4) ☐ Five (5) or more

4. What is the highest education obtained by your father?

☐ Primary School ☐ Lower Secondary School (PMR)
☐ Higher Secondary School (SPM) ☐ University or College Degree
☐ Sijil Kemahiran Malaysia or other vocational training

5. What is the highest education obtained by your mother?

☐ Primary School ☐ Lower Secondary School (PMR)
☐ Higher Secondary School (SPM) ☐ University or College Degree
☐ Sijil Kemahiran Malaysia or other vocational training

6. What is the combined income level of you parents?

☐ Below RM1500 per month ☐ RM1501 to RM3500 per month
☐ RM3501 to RM5500 per month ☐ Above RM5000 per month
☐ Not sure

7. Have you received any scholarships or education loans or other form of sponsorships from governmental or non-governmental organizations? For examples, the Malaysian Government, Perbadanan Tabung Pembangunan Kemahiran (PTPK), Perbadanan Tabung Pendidikan Tinggi Nasional (PTPN), etc?
- ☐ Yes ☐ No
8. What are you intending to do after completing your training here with the Vocational College?
- ☐ Work to earn money
- ☐ Continue vocational training at other vocational colleges
- ☐ Continue studies at university or other higher education institutions in Malaysia
- ☐ Continue studies at university or other higher education institutions in other countries
- ☐ Not sure
9. Do you think pursuing for higher education is more important than getting employment?
- ☐ Yes ☐ No ☐ Not sure
10. Do you know that some universities offer progression pathways for vocational students to continue for higher degree studies?
- ☐ Yes ☐ No
11. Have you been contacted or approached by any universities or colleges about higher education?
- ☐ Yes ☐ No
12. Have you been contacted or approached by any companies or government agencies about work opportunities or employment choices?
- ☐ Yes ☐ No
13. Have you attended any counselling sessions about continuing study at university or other higher education institutions?
- ☐ Yes ☐ No
14. Have you attended any counselling sessions about work opportunities and employment choices?
- ☐ Yes ☐ No
15. What do you think vocational students should do after completing vocational trainings at vocational colleges?
- ☐ Work to earn money

- ☐ Continue to study at university or other higher education institutions
- ☐ Not sure

II. Knowledge and Skills of vocational students- This section evaluates the knowledge and skills you can learn from your college/school.

(Please tick (✓) the appropriate box and write comments where indicated)

A. Below are the knowledge and skills that I can learn from my college/school.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I am trained with the skills to handle basic level jobs in the related field of work.	1	2	3	4	5
b	I am trained with advanced skills to handle higher level job in the related field of work.	1	2	3	4	5
c	I can learn enough knowledge and skills to work effectively in the real workplace.	1	2	3	4	5
d	I am trained with employability skills, (i.e. communication skills, social skills, team-working) while studying at vocational colleges or vocational schools.	1	2	3	4	5
e	I need more advanced trainings from an employer to work at the real workplace.	1	2	3	4	5
f	I need more advanced trainings or higher level education to stay competitive and competent.	1	2	3	4	5

B. Please write below any other knowledge or skills that you wish to learn that are not provided by your college/school.

III. Employment of vocational students – This section evaluates the employment opportunities you will potentially obtain after completing your trainings or courses here.

(Please tick (✓) the appropriate box and write comments where indicated)

A. Below are the employment opportunities I will potentially obtain after completing my trainings or courses here:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I am confident that I will get employment easily after completing vocational courses here.	1	2	3	4	5
b	I think I will face difficulties getting employment after completing my training or courses here.	1	2	3	4	5
c	I have already been offered a job by a company or a government agency.	1	2	3	4	5
d	I think I will be employed in work related to the field in which I am being trained here.	1	2	3	4	5
e	I think I will get a starting salary below RM1500 per month.	1	2	3	4	5
f	I need higher level training or education to get a better job with a better salary.	1	2	3	4	5
g	I will need university or other higher education to get career advancement.	1	2	3	4	5

IV. Progression options and preferences – This section evaluates what you wish to do after completing your trainings or courses here.

(Please tick (✓) the appropriate box and write comments where indicated)

A. Below are what I wish to do after completing my training or course here:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I wish to continue my study at university or college.	1	2	3	4	5
b	I wish to start working and earning money.	1	2	3	4	5
c	I am advised and encouraged to continue my study at university or another institution.	1	2	3	4	5
d	I am advised and encouraged to get a proper job and start earning money.	1	2	3	4	5
e	I am provided with money and other necessary supports to continue my study at university or other institution.	1	2	3	4	5

f	I am provided with necessary information and counselling to continue my study at university or other institution.	1	2	3	4	5
g	I am provided with necessary information and counselling to search for a job or employment opportunity.	1	2	3	4	5
h	I have been approached by universities or other institutions for the opportunity to progress to higher education.	1	2	3	4	5
i	I have been approached by a company or government agency about jobs or working opportunities.	1	2	3	4	5

B. Please write below any other things you wish to do after completing your training or course here.

V. Encouraging factors – This session evaluate what encourages you to continue your study at university or other institution after completing your trainings or courses here.

(Please tick (✓) the appropriate box and write comments where indicated)

A. The factors below encourage me to continue my study at university or other institution after completing my trainings or courses here:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Scholarships or education loan	1	2	3	4	5
b	Education loan	1	2	3	4	5
c	Other financial supports (For example, living allowance, free hostel, transportation money).	1	2	3	4	5
d	Family supports (i.e. encouragement from parents or other family members).	1	2	3	4	5
e	Peer influence (i.e. encouraged by friends).	1	2	3	4	5
f	The importance and benefits of higher education.	1	2	3	4	5

g	The opportunity to get better employment with higher qualifications.	1	2	3	4	5
h	The opportunity to get a higher salary with higher qualifications.	1	2	3	4	5
i	Better self-esteem with higher qualifications.	1	2	3	4	5
j	Opportunity to get better social status with higher qualifications.	1	2	3	4	5
k	Availability of progression route for higher education.	1	2	3	4	5
l	Easier access to university or availability of higher education institution around my residential area.	1	2	3	4	5
m	Counselling that provides more information about higher education.	1	2	3	4	5
n	Interesting courses at university or other institutions.	1	2	3	4	5
o	Challenging courses at university or other institutions.	1	2	3	4	5
p	More useful knowledge and skills can be learned from university or other institutions.	1	2	3	4	5
q	Encouragement or incentives given by government or Ministry of Education.	1	2	3	4	5

B. Please write below other factors that will encourage you to continue your study after completing your training or courses here.

VI. Benefits of higher education: This section evaluates the benefits that you will get if you continue your study at university or other institution.

(Please tick (✓) the appropriate box and write comments where indicated)

A. I think below are the benefits that I will possibly get if I get a higher qualification from university or other institution after completing my training or courses here:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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a	Better knowledge and skills.	1	2	3	4	5
b	Stable and secure employment.	1	2	3	4	5
c	Higher salary.	1	2	3	4	5
d	Improved income level.	1	2	3	4	5
e	Better career prospects.	1	2	3	4	5
f	Improved life-style.	1	2	3	4	5
g	Improved social status.	1	2	3	4	5
h	Improved self-esteem.	1	2	3	4	5

B. Please write below other benefits that you can possibly get if you get a higher qualification from university or another institution.

VII. Discouraging factors - This section evaluate the factors that discourage you from pursuing higher education at university or other institution after completing your trainings or courses here.

(Please tick (✓) the appropriate box and write comments where indicated)

A. Below are the factors that discourage you from pursuing higher education at university or other institution after completing your training or courses here:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Financial difficulties (for example, cannot afford the tuition fees or other expenses incurred due to higher education studies)	1	2	3	4	5
b	Family and social influence (no family members or friends are currently studying at universities or other higher education institutions).	1	2	3	4	5
c	University study is not relevant to my need.	1	2	3	4	5

d	University study is not important and beneficial.	1	2	3	4	5
e	Lack of information or counselling about higher education.	1	2	3	4	5
f	Lack of interest in a higher level education.	1	2	3	4	5
g	Lack of confidence to cope with the higher level education and to complete the studies successfully.	1	2	3	4	5
h	Lack of progression route for higher level education.	1	2	3	4	5
i	Difficulty of access to higher education institutions (i.e. universities are located in a different state or far from residential area).	1	2	3	4	5
j	University study is too difficult.	1	2	3	4	5
k	Different teaching styles in university or other higher education institutions (e.g., classroom teachings and theoretical studies).	1	2	3	4	5
l	Different assessment system at university or other higher education institutions (e.g., examinations and assignments).	1	2	3	4	5
m	High drop-out rate of previous vocational students from higher education that discourages new students from applying.	1	2	3	4	5
n	Difficult to get acceptance into university or other higher education institutions.	1	2	3	4	5
o	Application procedures to continue study at university or other institution are too difficult or too tedious.	1	2	3	4	5
p	Not accepted by university for Bachelor studies.	1	2	3	4	5

B. Please write below other factors that discourage you from pursuing higher education.

VIII. Possible problems encounter by vocational students at higher education: This section evaluates the problems or difficulties that you may possibly encounter if you continue your study at university or other higher education institutions.

(Please tick (✓) the appropriate box and write comments where indicated)

A. Below are the problems or difficulties that I may possibly encountered if I continue my study at university or other higher education institutions:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I may find difficulty coping with academic studies at universities or other higher education institutions.	1	2	3	4	5
b	I may find difficulty coping with emotional stress due to higher education studies.	1	2	3	4	5
c	I may find difficulty coping with emotional stress due to being away from home.	1	2	3	4	5
d	I may find difficulty adapting to traditional classroom teaching at universities or other higher education institutions.	1	2	3	4	5
e	I may find difficulty adapting to the academic assessment system (i.e. assignments and examinations) at university or other higher education institutions.	1	2	3	4	5

B. Please write below other problems or difficulties you may possibly encounter if you continue your studies at university or other higher education institutions.

IX. Recommendations – This section evaluates your opinions or ideas to make higher education more easily attainable to you.

(Please tick (✓) the appropriate box and write comments where indicated)

A. Below are my recommendations to make higher education more easily attainable to myself:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To provide financial assistance (e.g., scholarships, education loan, living allowances).	1	2	3	4	5
b	Assurance of job opportunities upon completion of higher education studies.	1	2	3	4	5
c	To provide more information and counselling about progression pathways and higher education programmes (e.g., which universities accept vocational students to enrol for Bachelor Degree studies or what courses are available for vocational students to enrol for higher degree studies).	1	2	3	4	5
d	To provide progression pathways for vocational students (For example, progression pathways to study Diploma or Bachelor Degree courses with universities or other higher education institutions).	1	2	3	4	5
e	Education policies that make higher education more easily accessible to vocational students with low socioeconomic background.	1	2	3	4	5

B. Please write below your other recommendations to make higher education easier attainable to you and your friends.

X. Role of Stakeholders: This section evaluates what other government or other organizations can do to make higher education more easily attainable to you.

(Please tick (✓) the appropriate box and write comments where indicated)

A. What can universities or other higher education institutions do to make higher education more easily attainable to you?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

a	To offer courses that accept a vocational qualification for entry.	1	2	3	4	5
b	To offer higher education courses in my college/school.	1	2	3	4	5
c	To provide more information and counselling services about higher education programmes and progression pathways to vocational students.	1	2	3	4	5
d	To design course structures and introduce teaching techniques that suits our needs.	1	2	3	4	5

B. Please write below what other things can universities or other higher education institutions do to make higher education more easily attainable to you.

C. What can vocational colleges or vocational schools do to make higher education more easily attainable to you?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To collaborate with universities or other higher education institutions so that we can be accepted by these universities or institutions for higher education courses.	1	2	3	4	5
b	To offer higher education programmes (at Undergraduate and Postgraduate levels) at the vocational colleges.	1	2	3	4	5
c	To upgrade the vocational programmes and make the courses competitive with programmes offered in universities or other higher education institutions.	1	2	3	4	5
d	To provide more information about the importance, benefits and relevance of higher education.	1	2	3	4	5
e	To improve the image of vocational education.	1	2	3	4	5

D. Please write below what else can vocational colleges or vocational schools do to make higher education more easily attainable to you.

E. What can government do to make higher education more easily attainable to you?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To provide financial assistance (for example, scholarships, education loans, living allowances, sponsorships).	1	2	3	4	5
b	To make higher education more easily accessible to me.	1	2	3	4	5
c	To make university or other higher education institutions accept our application for higher education.	1	2	3	4	5
d	To make vocational colleges collaborate with universities to create progression pathways for me.	1	2	3	4	5
e	To make companies or government agencies provide employment opportunities after completing university or higher education studies.	1	2	3	4	5
f	To improve the image of vocational education.	1	2	3	4	5

F. Please write below what else can government do to make higher education more easily attainable to you?

G. What can employers do to make higher education more easily attainable to you?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To provide financial assistance in sponsoring me to pursue higher education.	1	2	3	4	5

b	To provide better employment opportunities to us who manage to graduate with higher education qualifications.	1	2	3	4	5
c	To work with vocational colleges and higher education institutions in promoting benefits, importance and relevance of higher education.	1	2	3	4	5

H. Please write below what else can employers do to make higher education more easily attainable to you.

I. What can you do to make higher education more easily attainable?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Work harder in order to get better result.	1	2	3	4	5
b	Adapt to different teaching styles (for example, classroom teaching and theoretical learning).	1	2	3	4	5
c	Adapt to different assessment styles (for example, written examination and assignments).	1	2	3	4	5
d	Find out more information about universities and higher education.	1	2	3	4	5
e	Spend more effort in applying for admission into universities or other higher education institutions.	1	2	3	4	5

J. Please write below what other things can you and your friends do to make higher education more easily attainable.

Thank you for taking the time to complete these questions.

Questionnaires

Phase 1 Category B: Vocational Students from Vocational Colleges

Objektif kajian ini adalah untuk mendapatkan kefahaman tentang pelajar Pendidikan dan Latihan Vokasional (PLV) dan mengkaji sebab graduan-graduan PLV tidak melanjutkan pelajaran ke peringkat tinggi selepas tamat kursus vokasional. Semua maklum balas dianggap sulit dan identity anda tidak dapat dikenal pasti.

Sila tandakan (✓) pada ruang yang berkenaan dan tuliskan komen pada ruang yang disediakan.

I. Latarbelakang pelajar kolej vokasional: bahagian ini adalah untuk membuat penilaian latarbelakang keluarga dan pelajar yang sedang belajar di kolej vokasional.

1. Bilangan adik beradik

☐ Saya anak tunggal (1) ☐ Dua (2) ☐ Tiga (4) ☐ Empat (4) ☐ Lima (5) atau lebih

2. Jumlah ahli keluarga (termasuk ibu dan bapa) yang mempunyai kelayakan lepasan universiti

☐ Tiada (0) ☐ Satu (1) ☐ Dua (2) ☐ Tiga (3) ☐ Empat (4) ☐ Lima (5) atau lebih

3. Jumlah ahli keluarga yang masih belajar di university atau kolej lain?

☐ Tiada (0) ☐ Satu (1) ☐ Dua (2) ☐ Tiga (3) ☐ Empat (4) ☐ Lima (5) atau lebih

4. Peringkat pendidikan tertinggi bapa

☐ Sekolah Rendah ☐ Sekolah Menengah-Tingkatan Tiga (PMR)
☐ Sekolah Menengah-Tingkatan Lima (SPM) ☐ Universiti atau Kolej
☐ Sijil Kemahiran Malaysia atau latihan vokasional yang lain

5. Peringkat pendidikan tertinggi ibu

☐ Sekolah Rendah ☐ Sekolah Menengah-Tingkatan Tiga (PMR)
☐ Sekolah Menengah-Tingkatan Lima (SPM) ☐ Universiti atau Kolej
☐ Sijil Kemahiran Malaysia atau latihan vokasional yang lain

6. Jumlah pendapatan ibu dan bapa ?

☐ Kurang daripada RM1500 sebulan ☐ RM1501 ke RM3500 sebulan
☐ RM3501 ke RM5500 sebulan ☐ lebih daripada RM5000 sebulan
☐ Tidak pasti

7. Adakah anda pernah menerima biasiswa atau pinjaman pelajaran atau lain-lain bentuk penajaan dari kerajaan atau badan bukan kerajaan? For examples, the Malaysian Government, Perbadanan Tabung Pembangunan Kemahiran (PTPK), Perbadanan Tabung Pendidikan Tinggi Nasional (PTPN), etc?
- ☐ Ya ☐ Tidak
8. Perancangan selepas tamat latihan di kolej vokasional?
- ☐ Bekerja untuk mendapatkan wang
- ☐ Menyambung latihan vokasional di kolej vokasional yang lain
- ☐ Menyambung pengajian di universiti atau kolej-kolej pengajian tinggi yang lain di Malaysia
- ☐ Menyambung pengajian di universiti atau institut pengajian tinggi yang lain di luar negara
- ☐ Tidak pasti
9. Adakah belajar di university atau kolej pengajian tinggi lebih penting daripada mendapat perkerjaan?
- ☐ Ya ☐ Tidak ☐ Tidak pasti
10. Adakah anda tahu bahawa sesetengah universiti-universiti atau kolej-kolej pengajian tinngi menawarkan tingkatan laluan kepada pelajar-pelajar vokasional untuk melanjutkan pelajaran ke peringkat tertinggi?
- ☐ Ya ☐ Tidak
11. Adakah anda pernah dihubungi oleh universiti atau kolej-kolej tentang pengajian di peringkat yang lebih tinggi?
- ☐ Ya ☐ Tidak
12. Adakah anda pernah dihubungi oleh syarikat atau agensi kerajaan tentang pilihan kerjaya dan peluang pekerjaan?
- ☐ Ya ☐ Tidak
13. Adakah anda pernah menghadiri sesi kaunseling tentang melanjutkan pengajian ke universiti atau kolej pengajian tinggi?
- ☐ Ya ☐ Tidak
14. Adakah anda pernah menghadiri sesi kaunseling tentang pilihan kerjaya dan peluang pekerjaan?
- ☐ Ya ☐ Tidak
15. Pada pendapat anda, apakah yang harus dilakukan oleh pelajar vokasional setelah tamat latihan di kolej vokasional?

- ☐ Bekerja untuk mendapatkan wang
- ☐ Menyambung pengajian di unviersiti atau IPT yang lain
- ☐ Tidak Pasti

II. Pengetahuan dan kemahiran pelajar vokasional - bahagian ini adalah untuk menilai pengetahuan dan kemahiran yang diperoleh dari kolej/sekolah.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Di bawah adalah pengetahuan dan kemahiran yang saya peroleh dari kolej/sekolah vokasional ini.

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Saya dilatih dengan kemahiran asas pekerjaan berkaitan dengan bidang tersebut.	1	2	3	4	5
b	Saya dilatih dengan kemahiran lebih tinggi berkaitan dengan bidang tersebut.	1	2	3	4	5
c	Saya memperoleh pengetahuan dan kemahiran secukupnya untuk bekerja dengan efektif di tempat kerja yang sebenar.	1	2	3	4	5
d	Saya dilatih dengan kemahiran-kemahiran bekerja (contoh kemahiran berkomunikasi, kemahiran social, kerja berkumpulan) ketika belajar di sekolah vokasional sini.	1	2	3	4	5
e	Saya memerlukan latihan-latihan lanjutan daripada majikan untuk bekerja di tempat kerja yang sebenar.	1	2	3	4	5
f	Saya memerlukan kemahiran atau pendidikan lebih tinggi untuk terus berdaya saing dan kompeten	1	2	3	4	5

B. Sila tuliskan pengetahuan atau kemahiran lain yang anda ingin belajar tetapi tidak ditawarkan sekolah vokasional ini.

III. Pekerjaan pelajar vokasional – bahagian ini adalah untuk menilai peluang pekerjaan yang bakal anda peroleh selepas tamat latihan atau kursus di sini.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Di bawah adalah peluang pekerjaan yang bakal saya perolehi selepas tamat latihan atau kursus di sini.:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Saya yakin saya akan mendapat pekerjaan dengan mudah selepas tamat kursus vokasional di sini.	1	2	3	4	5
b	Saya akan menghadapi kesukaran untuk mendapatkan pekerjaan selepas tamat kursus vokasional di sini.	1	2	3	4	5
c	Saya sudah ditawarkan pekerjaan dari syarikat atau agensi kerajaan	1	2	3	4	5
d	Saya akan ditawarkan pekerjaan berkaitan dengan latihan yang saya ikuti di sini.	1	2	3	4	5
e	Permulaan gaji yang akan saya terima di bawah RM1500 sebulan	1	2	3	4	5
f	Saya memerlukan latihan peringkat lebih tinggi atau pendidikan untuk mendapatkan pekerjaan dan gaji yang lebih baik	1	2	3	4	5
g	Saya memerlukan universiti atau kolej pengajian tinggi untuk maju dalam kerjaya	1	2	3	4	5

IV. Pilihan-pilihan peningkatan dan kecenderungan – Bahagian ini menilai apa yang anda ingin lakukan selepas tamat latihan-latihan dan kursus-kursus di sini.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Dibawah adalah apa yang ingin saya lakukan selepas tamat latihan dan kursus saya di sini:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Saya mahu menyambung pengajian di universiti atau kolej pengajian tinggi.	1	2	3	4	5
b	Saya mahu berkerja dan mendapatkan wang.	1	2	3	4	5
c	Saya dinasihat dan disarankan untuk menyambung pengajian di universiti atau kolej pengajian tinggi yang lain	1	2	3	4	5

d	Saya dinasihat dan disarankan untuk mendapatkan pekerjaan dan mula memperoleh wang	1	2	3	4	5
e	Saya diberi wang dan bantuan yang secukupnya untuk menyambung pengajian di universiti atau kolej pengajian tinggi.	1	2	3	4	5
f	Saya diberi maklumat dan kaunseling yang secukupnya untuk menyambung pengajian di universiti atau kolej pengajian tinggi.	1	2	3	4	5
g	Saya diberi maklumat dan kaunseling yang secukupnya tentang cara untuk mendapatkan kerja atau peluang pekerjaan	1	2	3	4	5
h	Saya telah menemui university-universiti atau kolej- kolej pengajian tinggi untuk berbual tentang peluang untuk melanjutkan pelajaran ke peringkat university.	1	2	3	4	5
i	Saya telah menemui syarikat atau agensi perkerajaan untuk berbual tentang peluang-peluang pekerjaan.	1	2	3	4	5

B. Sila nyatakan apa yang anda ingin lakukan selepas tamat latihan atau kursus di sini.

V. Faktor galakan – Bahagian ini menilai factor yang menggalakkan anda untuk melanjutkan pengajian di universiti atau kolej pengajian tinggi lain selepas menamatkan latihan-latihan atau kursus-kursus di sini.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Faktor-faktor berikut menggalakkan saya untuk melanjutkan pengajian saya ke universiti atau kolej pengajian tinggi lain selepas menamatkan latihan-latihan atau kursus-kursus di sini.

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Biasiswa atau pinjaman pelajaran	1	2	3	4	5
b	pinjaman pelajaran	1	2	3	4	5

c	Bantuan kewangan (Contoh:elaun sara diri, asrama percuma, elaun pengangkutan).	1	2	3	4	5
d	Bantuan keluarga (contoh: galakan atau nasihat ibubapa dan keluarga saya).	1	2	3	4	5
e	Pengaruh rakan sebaya (i.e. galakan atau nasihat kawan-kawan).	1	2	3	4	5
f	Kepentingan dan kelebihan pengajian di peringkat lebih tinggi.	1	2	3	4	5
g	Peluang pekerjaan yang lebih baik dengan kelayakan yang lebih tinggi.	1	2	3	4	5
h	Peluang untuk mendapat gaji yang lebih tinggi berdasarkan kelayakan lebih tinggi.	1	2	3	4	5
i	Keyakinan diri yang lebih baik dengan kelayakan yang lebih tinggi.	1	2	3	4	5
j	Peluang untuk mendapatkan status sosial yang lebih baik dengan kelayakan lebih tinggi.	1	2	3	4	5
k	Penyediaan laluan peningkatan untuk pengajian tinggi.	1	2	3	4	5
l	Terdapat university atau kolej pengajian tinggi di sekeliling tempat tinggal saya.	1	2	3	4	5
m	Kaunseling yang memberi maklumat lebih lanjut tentang pengajian universiti atau kolej pengajian tinggi.	1	2	3	4	5
n	Kursus menarik yang ditawarkan di universiti atau kolej pengajian tinggi yang lain.	1	2	3	4	5
o	Kursus-kursus yang bercabar.	1	2	3	4	5
p	Boleh mendapat pengetahuan dan kemahiran-kemahiran lebih berguna.	1	2	3	4	5
q	Galakan atau insentif-insentif (seperti elaun sara diri, pinjaman wang) diberikan oleh kerajaan atau Kementerian Pelajaran.	1	2	3	4	5

B. Sila nyatakan di bawah faktor-faktor lain yang menggalakkan anda untuk melanjutkan pelajaran selepas menamatkan latihan atau kursus-kursus di sini.

VI. Kelebihan/kebaikan Pengajian Tinggi: Bahagian ini menilai kelebihan-kelebihan yang anda peroleh jika melanjutkan pelajaran di universiti atau kolej pengajian tinggi yang lain.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Di bawah adalah kelebihan-kelebihan yang saya mungkin akan peroleh jika saya menyambungkan peralajaran dan mendapatkan kelayakan yang lebih tinggi daripada universiti atau kolej pengajian tinggi yang lain selepas menamatkan latihan atau kursus-kursus di sini:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Kemahiran dan pengetahuan yang lebih baik.	1	2	3	4	5
b	Pekerjaan yang stabil dan terjamin.	1	2	3	4	5
c	Pendapatan yang lebih tinggi.	1	2	3	4	5
d	Menambah kadar pendapatan.	1	2	3	4	5
e	Peluang pekerjaan yang lebih baik.	1	2	3	4	5
f	Memperbaiki cara hidup.	1	2	3	4	5
g	Lebih berkenaan dan mendapat status social yang lebih baik.	1	2	3	4	5
h	Memperbaiki keyakinan diri.	1	2	3	4	5

B. Sila nyatakan di bawah kelebihan-kelebihan yang mungkin anda akan peroleh jika anda mendapatkan kelayakan yang tinggi daripada universiti atau kolej pengajian tinggi yang lain.

VII. Faktor-faktor yang tidak menggalakkan - Bahagian ini menilai faktor-faktor yang bukan penggalak daripada meneruskan pengajian yang lebih tinggi di universiti atau kolej pengajian tinggi lain selepas menamatkan latihan atau kursus-kursus di sini.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Di bawah adalah faktor-faktor yang TIDAK menggalakkan anda untuk meneruskan pengajian yang lebih tinggi di universiti atau kolej pengajian tinggi lain selepas menamatkan latihan atau kursus-kursus di sini:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Masalah kewangan (contoh, tidak mampu untuk membayar yuran pengajian atau lain-lain perbelanjaan kerana kos yang tinggi di universiti atau kolej pengajian tinggi).	1	2	3	4	5
b	Pengaruh keluarga dan sosial (tiada ahli keluarga yang sedang belajar di di universiti atau kolej pengajian tinggi).	1	2	3	4	5
c	Pengajian di universiti tidak berkenaan dengan keperluan saya.	1	2	3	4	5
d	Pengajian di universiti adalah tidak penting dan tidak bermanfaat.	1	2	3	4	5
e	Kurang maklumat atau kaunseling tentang pengajian peringkat lebih tinggi.	1	2	3	4	5
f	Kurang minat tentang pengajian peringkat lebih tinggi.	1	2	3	4	5
g	Kekurangan keyakinan diri untuk menghadapi pengajian ke peringkat yang lebih tinggi dan menamatkan pengajian dengan berjaya.	1	2	3	4	5
h	Kekurangan kursus-kursus yang berkenaan.	1	2	3	4	5
i	Universiti-universiti atau kolej-kolej pengajian tinggi biasanya terletak di negeri berlainan atau terlalu jauh dari kawasan perumahan saya.	1	2	3	4	5
j	Pengajian atau pelajaran di universiti terlalu susah.	1	2	3	4	5
k	Cara mengajar di universiti atau kolej pengajian tinggi adalah berlainan dan lebih susah (contohnya, saya tidak suka mengikut pengajaran di bilik kuliah dan pengajian teori).	1	2	3	4	5
l	Sistem penilaian yang berlainan di universiti atau institusi pengajian tinggi (contohnya, peperiksaan dan kerja essei).	1	2	3	4	5
m	Pelajar-pelajar lain yang tidak dapat menghabiskan pelajaran di universiti menyebabkan kekurangan keyakinan saya untuk menyambung pelajaran di universiti atau kolej pengajian tinggi	1	2	3	4	5

n	Kepayahan untuk diterima masuk ke universiti atau kolej pengajian tinggi.	1	2	3	4	5
o	Proses permohonan untuk melanjutkan pengajian di universiti atau kolej pengajian tinggi adalah sukar atau terlalu membosankan. Contohnya, terlalu banyak boring perlu diisi.	1	2	3	4	5
p	Tidak diterima atau ditawarkan tempat untuk belajar di universiti atau kolej pengajian tinggi.	1	2	3	4	5

B. Sila nyatakan di bawah faktor-faktor yang lain yang tidak menggalakkan anda untuk melanjutkan pengajian di universiti atau kolej pengajian tinggi.

VIII. Kemungkinan permasalahan yang dihadapi oleh pelajar vokasional semasa pengajian tinggi: bahagian ini menilai permasalahan atau kesulitan yang mungkin anda hadapi jika anda melanjutkan pelajaran di universiti atau institusi pengajian tinggi lain.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

B. Di bawah adalah masalah-masalah atau kesulitan yang mungkin saya hadapi jika saya melanjutkan pelajaran di universiti atau institusi pengajian tinggi lain.

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Saya akan menghadapi kesulitan dalam pelajaran akademik di universiti atau kolej pengajian tinggi.	1	2	3	4	5
b	Saya akan menghadapi kesulitan dengan tekanan emosi disebabkan pengajian tinggi.	1	2	3	4	5
c	Saya akan menghadapi kesulitan dengan tekanan emosi kerana jauh dari rumah.	1	2	3	4	5
d	Saya akan menghadapi kesulitan pengajaran di dalam kelas di universiti atau kolej pengajian tinggi.	1	2	3	4	5
e	Saya akan menghadapi kesulitan untuk menyesuaikan diri dengan system penilaian akademik (contoh tugas dan peperiksaan) di universiti atau kolej pengajian tinggi.	1	2	3	4	5

- B. Sila nyatakan di bawah ini permasalahan lain yang mungkin anda hadapi jika anda melanjutkan pelajaran di universiti atau kolej pengajian tinggi.**

IX. Cadangan – bahagian ini menilai pendapat anda atau cadangan untuk membuat pengajian tinggi lebih mudah dicapai bagi anda.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- B. Di bawah adalah cadangan-cadangan untuk membuatkan pengajian tinggi lebih mudah dicapai bagi saya:**

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Memberi bantuan kewangan(elaun sara diri, biasiswa,pinjaman pelajaran)	1	2	3	4	5
b	Jaminan peluang pekerjaan setelah tamat pengajian	1	2	3	4	5
c	Menberi lebih banyak maklumat dan kaunseling tentang laluan peningkatan dan program pengajian tinggi (contoh universiti mana yang menerima pelajar vokasional untuk daftar pengajian sarjana muda atau kursus yang bersesuaian and ditawarkan kepada pelajar vokasional untuk daftar ke pengajian tinggi)	1	2	3	4	5
d	Penyediaan laluan peningkatan untuk pelajar vokasional (contoh, memberi kursus yang berkenaan dan menerima pelajar vokasional untuk kursus pengajian diploma atau sarjana muda di university/kolej)	1	2	3	4	5
e	Polisi pendidikan yang membantu pelajar vokasional untuk mencabai pengajian lebih tinggi (contoh: membuatkan pengajian tinggi lebih mudah diakses oleh pelajar vokasional yang miskin).	1	2	3	4	5

- B. Sila nyatakan di bawah ini cadangan-cadangan untuk membuatkan pengajian tinggi lebih mudah dicapai bagi anda dan rakan-rakan anda.**

- X. Peranan pihak berkepentingan: bahagian ini menilai apakah kerajaan lain atau organisasi lain boleh lakukan untuk membuatkan pengajian tinggi lebih mudah dicapai bagi anda.**

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- B. Apakah yang universiti atau institusi pengajian tinggi lain boleh melakukan untuk membuatkan pengajian tinggi lebih mudah dicapai bagi anda?**

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Menawarkan kursus kepada pelajar vokasional untuk melanjutkan pelajaran.	1	2	3	4	5
b	Menawarkan kursus pengajian yang lebih tinggi di sekolah vokasional saya.	1	2	3	4	5
c	Memberi lebih banyak maklumat dan kaunseling tentang program pengajian tinggi dari universiti atau kolej pengajian tinggi.	1	2	3	4	5
d	Menstruktur dan memperkenalkan teknik pengajaran yang lebih sesuai dengan keperluan dan kemampuan pelajar vokasional.	1	2	3	4	5

- B. Sila nyatakan perkara-perkara lain yang boleh dilakukan oleh universiti atau institusi pengajian tinggi untuk membuatkan pengajian tinggi lebih mudah dicapai bagi anda.**

- K. Apa yang boleh dilakukan oleh kolej vokasional atau sekolah vokasional anda untuk membuatkan pengajian tinggi lebih mudah dicapai oleh anda?**

	Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
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a	Bekerjasama dengan universiti atau institusi pengajian tinggi agar mereka menerima pelajar-pelajar vokasional untuk melanjutkan pelajaran yang lebih tinggi.	1	2	3	4	5
b	Menawarkan program pengajian tinggi (peringkat sarjana muda dan pascasiswazah) di sekolah-sekolah vokasional sendiri.	1	2	3	4	5
c	Meningkatkan program vokasional dan menjadikan program yang ditawarkan lebih setingkat atau setara dengan kursus universiti atau kolej pengajian tinggi.	1	2	3	4	5
d	Memberi lebih banyak maklumat tentang kepentingan dan faedah pendidikan tinggi.	1	2	3	4	5
e	Memperbaiki imej pendidikan vokasional.	1	2	3	4	5

L. Sila nyatakan perkara-perkara lain yang boleh dilakukan oleh sekolah vokasional untuk membuatkan pengajian tinggi lebih mudah dicapai bagi anda.

M. Apakah yang boleh dilakukan oleh kerajaan untuk membuatkan pengajian tinggi lebih mudah dicapai bagi anda?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Menyediakan bantuan kewangan (sebagai contoh biasiswa, pinjaman pelajaran, elaun sara hidup, penajaan)	1	2	3	4	5
b	Membangunkan lebih banyak universiti atau kolej pengajian tinggi di bersekitaran kawasan bertinggalan/rumah saya.	1	2	3	4	5
c	Memberi perintah kepada universiti atau institusi pengajian tinggi untuk menerima permohonan pelajar-pelajar vokasional.	1	2	3	4	5
d	Menggalakkan sekolah vokasional untuk bekerjasama dengan universiti atau kolej pengajian tinggi supaya menawarkan kursus-kursus yang lebih sesuai untuk pelajar	1	2	3	4	5

	vokasional.					
e	Menggalakkan syarikat atau agensi kerajaan untuk memberi peluang pekerjaan yang lebih baik selepas menamatkan pelajaran di universiti atau pengajian tinggi.	1	2	3	4	5
f	Untuk memperbaiki imej pendidikan vokasional.	1	2	3	4	5

N. Sila nyatakan perkara-perkara lain yang boleh dilakukan oleh kerajaan untuk membuat pengajian tinggi lebih mudah dicapai bagi anda?

O. Apakah yang boleh dilakukan oleh majikan supaya membuat pengajian tinggi lebih mudah dicapai bagi anda?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Memberi bantuan kewangan untuk menaja saye menyambung pengajian di peringkat lebih tinggi.	1	2	3	4	5
b	Memberi peluang pekerjaan lebih baik untuk kami yang tamat pengajian dengan kelayakan pendidikan yang lebih tinggi.	1	2	3	4	5
c	Membantu sekolah vokasional dan university atau kolej pengajian tinggi dalam mempromosikan faedah, kepentingan dan manfaat pendidikan tinggi.	1	2	3	4	5

P. Sila nyatakan perkara-perkara lain yang boleh dilakukan oleh majikan untuk membuat pengajian tinggi lebih mudah dicapai bagi anda.

Q. Apakah yang anda boleh lakukan untuk membuat pengajian tinggi lebih mudah dicapai?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Berusaha lebih keras untuk mendapat keputusan pelajaran yang lebih baik.	1	2	3	4	5
b	Menyesuaikan diri dengan cara pengajaran yang lain (Contoh: pengajaran di bilik kuliah dan pembelajaran teori)	1	2	3	4	5
c	Menyesuaikan diri dengan cara penilaian yang berbeza (Contoh: peperiksaan bertulis dan kerja essei)	1	2	3	4	5
d	Mencari maklumat lebih lanjut tentang universiti dan kolej pengajian tinggi yang menawarkan pelajaran tinggi	1	2	3	4	5
e	Berusaha and meluangkan lebih masa untuk memohon kemasukan ke universiti atau kolej pengajian tinggi.	1	2	3	4	5

R. Sila nyatakan perkara-perkara lain yang boleh anda dan rakan-rakan anda melakukan untuk membuatkan pengajian tinggi lebih mudah dicapai.

Terima kasih kerana mengambil masa untuk menyelesaikan soalan-soalan disini.

Appendix 2 Questionnaires for School Leaders/Chief Administrators of VET Institutions

Questionnaires

Phase II Category A: Chief Administrators from Vocational Colleges

The objective of this survey is to seek understanding about the learning of Vocational Education and Training (VET) students and to examine why VET graduates are not progressing for higher education after completing their vocational course. **All replies will be strictly confidential and you will not be identified in any way.**

Please tick (✓) the appropriate box and write comments where indicated.

I. Background or profile of students at Vocational College: This session evaluates the family background and profile of vocational students currently studying at Vocational College.

1. The total number of students in this institution.
☐ Below 300 ☐ 300 to 500 ☐ 501 to 700 ☐ 701 to 1000 ☐ Above 1000
2. The percentage of VET students from low household income group (monthly household income below RM1500 per month).
☐ 80% and above ☐ 50% to 79% ☐ 20% to 49% ☐ Less than 20% ☐ Not sure
3. The percentage of students receiving financial aid, in forms of scholarship or education loan, from government or any other corporations, i.e. PTPTN and PTPK.
☐ 80% and above ☐ 50% to 79% ☐ 20% to 49% ☐ Less than 20% ☐ Not sure
4. The percentage of students registered under apprenticeships with government agencies or commercial companies.
☐ 80% and above ☐ 50% to 79% ☐ 20% to 49% ☐ Less than 20% ☐ Not sure
5. The percentage of students enrolled into vocational colleges or vocational schools due to low academic performances at traditional secondary schools.
☐ 80% and above ☐ 50% to 79% ☐ 20% to 49% ☐ Less than 20% ☐ Not sure
6. The percentage of students enrolled into vocational colleges or vocational schools due to a financially disadvantaged background.
☐ 80% and above ☐ 50% to 79% ☐ 20% to 49% ☐ Less than 20% ☐ Not sure
7. The percentage of students enrolled into vocational colleges or vocational schools due to their own interest in the vocational programmes.
☐ 80% and above ☐ 50% to 79% ☐ 20% to 49% ☐ Less than 20% ☐ Not sure
8. The completion rate of vocational students (percentage of students completing the vocational courses with Vocational College successfully).

☐ 80% and above
 ☐ 50% to 79%
 ☐ 10% to 49%
 ☐ Less than 10%
 ☐ Not sure

9. The percentage of students opting to work immediately after completing vocational courses with Vocational College.

☐ 80% and above
 ☐ 50% to 79%
 ☐ 10% to 49%
 ☐ Less than 10%
 ☐ Not sure

10. The percentage of students opting for higher education with university or other higher education institutions after completing vocational courses with Vocational College.

☐ 80% and above
 ☐ 50% to 79%
 ☐ 11% to 49%
 ☐ Less than 10%
 ☐ Not sure

II. Knowledge and Skills of vocational students- This section evaluates generally the knowledge learned and the skill level of vocational students after completing their vocational courses at any of the vocational colleges/schools in Malaysia.

(Please tick (✓) the appropriate box and write comments where indicated)

C. Below are the knowledge learned and skill level of vocational students after completing their vocational courses with any of the vocational colleges/schools in Malaysia:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Vocational students are trained with the skills to handle basic level job in the related field of work.	1	2	3	4	5
b	Vocational students are trained with advanced skills to handle higher level jobs in the related field of work.	1	2	3	4	5
c	Vocational students learn enough knowledge and skills to work effectively in the real workplace.	1	2	3	4	5
d	Vocational students are trained with employability skills, (i.e. communication skills, social skills, team-working) while studying at vocational colleges or vocational schools.	1	2	3	4	5
e	Vocational students require more advanced trainings from employers to work at the real workplace.	1	2	3	4	5
f	Vocational students require more advanced trainings or higher level education to stay competitive and competent.	1	2	3	4	5

- B. Please write below other knowledge or skills learned by vocational students but are not mentioned in the list above.**

- C. What are the extra skills or knowledge that vocational students can learn from your college but not in other vocational colleges/schools in Malaysia?**

III. Employment of vocational students – This section evaluates the employment opportunities potentially obtained by vocational students after completing their vocational courses with any of the vocational colleges/schools in Malaysia.

(Please tick (✓) the appropriate box and write comments where indicated)

- C. Below are the employment opportunities potentially obtained by vocational students after completing their vocational courses with any of the vocational colleges/schools in Malaysia:**

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Vocational students manage to get employment easily after completing vocational courses at vocational colleges or vocational schools.	1	2	3	4	5
b	Vocational students face difficulties getting employment after completing vocational courses at vocational colleges or vocational schools.	1	2	3	4	5
c	Vocational students usually get employed into work related to the field which they are being trained at the vocational college or vocational schools.	1	2	3	4	5
d	The starting salary of Vocational students is below RM1500 per month.	1	2	3	4	5
e	Vocational students require higher level trainings or education to get secured employment with decent salary in the job market.	1	2	3	4	5
f	Vocational students require higher education to get career advancement.	1	2	3	4	5

- B. Please write below other employment opportunities of vocational students after completing their vocational courses but are not mentioned in the list above.**

- C. What are the other employment opportunities will only be obtained by students at your college but not by the students in other vocational colleges/schools in Malaysia? Why?**

IV. Progression options and preferences – This section evaluates the preferences or options of Vocational students in choosing their progression pathway after completing vocational courses at any of the vocational colleges/schools in Malaysia.

(Please tick (✓) the appropriate box and write comments where indicated)

- C. Below are the preferences or options of Vocational students in choosing their progression pathway after completing vocational courses at any of the vocational colleges/schools in Malaysia:**

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Vocational students generally have low aspirations for higher education at university or other higher education institutions.	1	2	3	4	5
b	Vocational students generally prefer to continue studying for higher level education at university or other higher education institutions after completing their vocational courses.	1	2	3	4	5
c	Vocational students generally prefer to work after completing their vocational courses.	1	2	3	4	5
d	Vocational students are usually encouraged to pursue higher education with university or other higher education institutions after completing their vocational courses.	1	2	3	4	5
e	Vocational students are usually encouraged to work or get employment after completing their vocational courses.	1	2	3	4	5
f	Vocational students are provided with necessary supports to progress for higher education, i.e. financial loan, hostel or living allowance.	1	2	3	4	5

g	Vocational students are usually provided with necessary counselling or information about opportunity to progress for higher education, i.e. information about university and courses available.	1	2	3	4	5
h	Vocational students are usually provided with necessary counselling or information about job opportunities and employment information.	1	2	3	4	5
i	Vocational student are approached for opportunity to progress for higher education by universities or other higher education institutions.	1	2	3	4	5
j	Vocational student are approached for job or employment opportunity by employers.	1	2	3	4	5

B. Please write below other preferences or options of Vocational students in choosing their progression pathway but are not mentioned in the list above.

C. What are the progression pathways available only to students at your college but not available to students in other vocational colleges? Why?

V. Encouraging factors – This section evaluates the factors encouraging vocational students to continue for higher education after completing their courses with any of the vocational colleges/schools in Malaysia.

(Please tick (✓) the appropriate box and write comments where indicated)

C. Below are the factors encouraging vocational students to continue for higher education after completing their courses with any of the vocational colleges/schools in Malaysia:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Scholarships	1	2	3	4	5
b	Education loans	1	2	3	4	5

c	Financial supports for living (i.e., living allowance, free hostel).	1	2	3	4	5
d	Family supports (i.e. encouragement from parents or other family members)	1	2	3	4	5
e	Peers influence (i.e. encourage by friends)	1	2	3	4	5
f	Awareness about importance and benefits of higher education.	1	2	3	4	5
g	Desire to get better employment with higher qualification.	1	2	3	4	5
h	Desire to get higher salary with higher qualification.	1	2	3	4	5
i	Desire to get better esteem with higher qualification.	1	2	3	4	5
j	Desire to get better social status with higher qualification.	1	2	3	4	5
k	Availability of progression route for higher education.	1	2	3	4	5
l	Easier access to university or higher education institution around students' residential area.	1	2	3	4	5
m	Government or education policies that make higher education accessible to vocational students.	1	2	3	4	5
n	A friendlier and easier accessible higher education system.	1	2	3	4	5
o	Easy availability of counselling services and information about higher education.	1	2	3	4	5
p	Higher education programmes or courses that interest vocational student to pursue for higher education.	1	2	3	4	5
q	Useful knowledge and skills to be learned in higher education.	1	2	3	4	5
r	The challenges posed by higher education courses or programmes.	1	2	3	4	5
s	Encouragement or incentives by government or Ministry of Education.	1	2	3	4	5
t	Collaboration between vocational college and university to create pathways for vocational students to progress for higher level education at university.	1	2	3	4	5
u	Collaboration between vocational college and university to design courses or programmes suitable for vocational students.	1	2	3	4	5

- B. Please write below other factors encouraging vocational students to continue for higher education but are not mentioned in the list above.**

VI. Benefits of higher education: This section evaluates the benefits that are potentially brought by higher education to vocational students with low socioeconomic background.

(Please tick (✓) the appropriate box and write comments where indicated)

C. Below are the benefits that are potentially brought by higher education to vocational students with low socioeconomic background:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	Better knowledge and skills.	1	2	3	4	5
b	Stable and secured employment.	1	2	3	4	5
c	Higher salary.	1	2	3	4	5
d	Improved income level.	1	2	3	4	5
e	Better career prospect.	1	2	3	4	5
f	Improved life-style.	1	2	3	4	5
g	Improved social status.	1	2	3	4	5
h	Improved self-esteem.	1	2	3	4	5

B. Please write below other benefits that are potentially brought by higher education to vocational students with low socioeconomic background but are not mentioned in the list above.

VII. Discouraging factors - This section evaluates the factors discouraging vocational students from pursuing for higher education after completing their courses with any of the vocational colleges/schools in Malaysia.

(Please tick (✓) the appropriate box and write comments where indicated)

C. Below are the factors discouraging vocational students from pursuing for higher education after completing their courses with any of the vocational colleges/schools in Malaysia:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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a	Financial difficulties (for example, cannot afford the tuition fees or other expenses incurred due to higher education studies)	1	2	3	4	5
b	Low aspiration towards higher education.	1	2	3	4	5
c	Fail to see the relevancy, importance and benefits of higher education.	1	2	3	4	5
d	Family and Social influence (For example, students are being surrounded with neighbours or relatives who have not attained higher education).	1	2	3	4	5
e	Lack of information or counselling about higher education.	1	2	3	4	5
f	Lack of interest in a higher level education.	1	2	3	4	5
g	Lack of confidence to cope with the higher level educations and to complete the studies successfully.	1	2	3	4	5
h	Lack of progression route for higher level education (i.e. not accepted by university for Bachelor studies).	1	2	3	4	5
i	Difficulty to access to higher education institutions (i.e. universities are located in different state or far from residential area).	1	2	3	4	5
j	Incompatible education and trainings between vocational education and higher education.	1	2	3	4	5
k	Different teaching styles in university or other higher education institutions that make learning difficult (i.e., classroom teachings and theoretical studies).	1	2	3	4	5
l	Different assessment system at university or other higher education institutions (i.e., examinations and assignments).	1	2	3	4	5
m	High drop-out rate of previous vocational students from higher education that discourages new students from applying.	1	2	3	4	5
n	Lack of collaborations between vocational colleges and universities institutions that create pathways for vocational students to progress for higher level education.	1	2	3	4	5

o	Lack of collaborations between vocational colleges and university that design higher education programmes suitable for vocational students.	1	2	3	4	5
p	Lack of government or education policies that encourage vocational students from pursuing for higher education.	1	2	3	4	5
q	Government or education policies that are not friendly or encouraging for vocational students to pursue for higher education.	1	2	3	4	5
r	Government or education policies that preventing universities or other higher education institutions from accepting vocational students for higher level education.	1	2	3	4	5

B. Please write below other factors that discourage vocational students with low socioeconomic background from pursuing for higher education but are not mentioned in the list above.

VIII. Possible problems encounter by vocational students at higher education: This section evaluates the problems or difficulties possibly faced by vocational students who progress for higher education at universities or other higher education institutions.

(Please tick (✓) the appropriate box and write comments where indicated)

C. Below are the problems or difficulties possibly faced by the vocational students who progress for higher education at universities or other higher education institutions:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	May find difficulty coping with academic studies at universities or other higher education institutions.	1	2	3	4	5
b	May find difficulty coping with emotional stress due to higher education studies.	1	2	3	4	5
c	May find difficulty coping with emotional stress due to being away from home.	1	2	3	4	5
d	May find difficulty adapting to traditional classroom teachings at universities or other higher education institutions.	1	2	3	4	5

e	May find difficulty adapting to academic assessment system (i.e. assignments and examinations) at university or other higher education institutions.	1	2	3	4	5
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- B. Please write below other problems possibly encountered by vocational students who progress for higher education.**
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IX. Recommendations – This section evaluates opinions or ideas to overcome barriers encountered in order to make higher education easier accessible to vocational students with low socioeconomic background

(Please tick (✓) the appropriate box and write comments where indicated)

- C. Below are my recommendations to overcome barriers encountered by vocational students with low socioeconomic background in order to make higher education easier accessible:**

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To provide financial assistances (i.e., scholarships, education loan, living allowances).	1	2	3	4	5
b	Assurance of job opportunities upon completion of higher education studies.	1	2	3	4	5
c	To provide more information and counselling about progression pathways and higher education programmes (i.e., what universities accept vocational students to enrol for Bachelor Degree studies or what courses are available for vocational students to enrol for higher degree studies).	1	2	3	4	5
d	To provide progression pathways for vocational students (i.e., progression pathways to study Diploma or Bachelor Degree courses with universities or other higher education institutions).	1	2	3	4	5
e	Education policies that make higher education easier accessible to vocational students with low socioeconomic background.	1	2	3	4	5

- B. Please write below other recommendations to overcome barriers encountered by vocational students with low socioeconomic background.**
-
-

X. Role of Stakeholders: This section evaluates the role and responsibilities of stakeholders to make higher education accessible to vocational students after completing their courses at vocational colleges/schools.

(Please tick (✓) the appropriate box and write comments where indicated)

C. What can universities or other higher education institutions do to encourage vocational students to pursue for higher education?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To offer more progression pathways for vocational students.	1	2	3	4	5
b	To provide better recognition and acceptance to vocational certifications.	1	2	3	4	5
c	To assist vocational colleges or schools in developing higher education programmes.	1	2	3	4	5
d	To provide more information and counselling services about higher education programmes and progression pathways to vocational students.	1	2	3	4	5
e	To design course structures and introduce teaching techniques that interest and suit the needs of the vocational students	1	2	3	4	5

B. Please write below what other things can universities or other higher education institutions do to encourage vocational students to pursue for higher education.

S. What can vocational colleges or vocational schools do to encourage vocational students to pursue for higher education?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To collaborate with universities or other higher education institutions in creating progression pathways for vocational students.	1	2	3	4	5

b	To offer higher education programmes (at Undergraduate and Postgraduate levels) at the vocational colleges.	1	2	3	4	5
c	To upgrade the vocational programmes and make the courses competitive with programmes offered in universities or other higher education institutions.	1	2	3	4	5
d	To promote the importance, benefits and relevance of higher education among vocational students.	1	2	3	4	5
e	Improve the image of vocational education.	1	2	3	4	5

T. Please write below what else can vocational colleges or vocational schools do to encourage vocational students to pursue for higher education.

U. What can government do to encourage VET graduates to pursue for higher education?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To provide financial assistance to vocational students to pursue for higher education.	1	2	3	4	5
b	To impose policies that makes higher education easier accessible to vocational students.	1	2	3	4	5
c	To impose policies for university or other higher education institutions to provide progression pathways to vocational students.	1	2	3	4	5
d	To impose policies that encourages collaboration between vocational colleges and universities to create progression pathways for vocational students.	1	2	3	4	5
e	To provide incentives and assistances for vocational colleges to develop higher education programmes.	1	2	3	4	5
f	To provide incentives and encouragement for employers to sponsor employees with vocational certifications for higher education.	1	2	3	4	5
g	To improve the image of vocational education.	1	2	3	4	5

V. Please write below what else can government do to encourage vocational students to pursue for higher education.

W. What can the employers do to encourage VET graduates to pursue for higher education?

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	To provide financial assistances in sponsoring vocational students in pursuing higher education.	1	2	3	4	5
b	To provide better employment opportunities to vocational student graduated with higher education qualifications.	1	2	3	4	5
c	To provide incentives for employees with vocational certification to pursue higher education.	1	2	3	4	5
d	To work with vocational colleges and higher education institutions in promoting benefits, importance and relevance of higher education.	1	2	3	4	5
e	To assist vocational colleges in improving the image of vocational educations (i.e. to make it recognizable to the higher education institutions as well as in society).	1	2	3	4	5

X. Please write below what else can employers do to encourage vocational students to pursue for higher education.

Thank you for taking the time to complete these questions.

Soalselidik

Fasa II Kategori A: Chief Administrators from Vocational Colleges

Objektif kajian ini adalah untuk mendapatkan pemahaman tentang pembelajaran pelajar Pendidikan dan Latihan Vokasional (VET) dan untuk mengkaji mengapa graduan VET tidak maju ke peringkat pendidikan tinggi selepas menamatkan kursus vokasional mereka. **Semua maklumbalas adalah sulit dan anda tidak akan dikenal pasti dalam apa jua cara.**

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

I. Latar belakang atau profil pelajar di Kolej Vokasional: Seksyen ini menilai latar belakang keluarga dan profil pelajar yang sedang belajar di Kolej Vokasional.

1. Bilangan keseluruhan pelajar di institusi ini.
☐ Kurang dari 300 ☐ 300 - 500 ☐ 501 - 700 ☐ 701 – 1000 ☐ Lebih daripada 1000
2. Peratus pelajar VET dari kumpulan pendapatan isi rumah rendah (pendapatan isi rumah bulanan di bawah RM1500 sebulan).
☐ 80% ke atas ☐ 50% - 79% ☐ 20% - 49% ☐ Kurang daripada 20% ☐ Tidak tentu
3. Peratus pelajar yang menerima bantuan kewangan, dalam bentuk biasiswa atau pinjaman pendidikan, dari kerajaan atau badan lain seperti PTPTN dan PTPK.
☐ 80% ke atas ☐ 50% - 79% ☐ 20% - 49% ☐ Kurang daripada 20% ☐ Tidak tentu
4. Peratus pelajar yang berdaftar dalam skim perantisan (apprenticeship) dengan agensi-agensi kerajaan atau syarikat-syarikat komersial.
☐ 80% ke atas ☐ 50% - 79% ☐ 20% - 49% ☐ Kurang dari 20% ☐ Tidak tentu
5. Peratus pelajar yang mendaftarkan diri ke kolej vokasional atau sekolah vokasional disebabkan oleh prestasi akademik yang rendah di sekolah-sekolah menengah biasa.
☐ 80% ke atas ☐ 50% - 79% ☐ 20% - 49% ☐ Kurang dari 20% ☐ Tidak tentu
6. Peratus pelajar yang mendaftarkan diri ke kolej vokasional atau sekolah vokasional kerana latar belakang kewangan yang kurang baik.
☐ 80% ke atas ☐ 50% - 79% ☐ 20% - 49% ☐ Kurang dari 20% ☐ Tidak tentu
7. Peratus pelajar yang mendaftarkan diri ke kolej vokasional atau sekolah vokasional kerana berminat dalam program vokasional.
☐ 80% ke atas ☐ 50% - 79% ☐ 20% - 49% ☐ Kurang dari 20% ☐ Tidak tentu
8. Peratusan pelajar yang melengkapkan kursus vokasional berjaya dengan Kolej Vokasional.

☐ 80% ke atas
 ☐ 50% - 79%
 ☐ 10% - 49%
 ☐ Kurang dari 10%
 ☐ Tidak tentu

9. Peratus pelajar memilih untuk bekerja sejurus selepas menamatkan kursus vokasional dengan Kolej Vokasional.

☐ 80% ke atas
 ☐ 50% - 79%
 ☐ 10% - 49%
 ☐ Kurang dari 10%
 ☐ Tidak tentu

10. Peratus pelajar memilih untuk pendidikan yang lebih tinggi dengan universiti atau institusi pengajian tinggi lain selepas menamatkan kursus vokasional dengan Kolej Vokasional.

☐ 80% ke atas
 ☐ 50% - 79%
 ☐ 10% - 49%
 ☐ Kurang dari 10%
 ☐ Tidak tentu

II. Pengetahuan dan Kemahiran vokasional pelajar - Seksyen ini menilai pengetahuan yang dipelajari dan tahap kemahiran pelajar vokasional selepas menamatkan kursus vokasional mereka di mana-mana kolej / sekolah vokasional di Malaysia.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

A. Berikut adalah pengetahuan yang dipelajari dan tahap kemahiran pelajar vokasional selepas menamatkan kursus vokasional mereka dengan mana-mana kolej / sekolah vokasional di Malaysia:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Pelajar vokasional dilatih dengan kemahiran untuk mengendalikan kerja tahap asas dalam bidang yang berkaitan.	1	2	3	4	5
b	Pelajar vokasional dilatih dengan kemahiran lanjutan untuk mengendalikan kerja-kerja peringkat yang lebih tinggi dalam bidang yang berkaitan.	1	2	3	4	5
c	Pelajar vokasional mempelajari pengetahuan dan kemahiran yang cukup untuk bekerja dengan berkesan di tempat kerja sebenar.	1	2	3	4	5
d	Pelajar vokasional memperolehi kemahiran yang meningkatkan potensi pekerjaan, (iaitu kemahiran komunikasi, kemahiran sosial, kerja berpasukan) semasa belajar di kolej-kolej vokasional atau sekolah-sekolah vokasional.	1	2	3	4	5
e	Pelajar vokasional memerlukan latihan tahap tinggi daripada majikan untuk bekerja di tempat kerja yang sebenar.	1	2	3	4	5

f	Pelajar vokasional memerlukan latihan tahap tinggi atau pendidikan yang lebih tinggi supaya lebih cekap dan berdaya saing.	1	2	3	4	5
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B. Sila tulis di bawah lain-lain pengetahuan atau kemahiran yang dipelajari oleh pelajar-pelajar vokasional yang tidak disebut dalam senarai di atas.

C. Apakah kemahiran atau pengetahuan tambahan yang pelajar vokasional boleh belajar dari kolej anda tetapi tidak di kolej-kolej / sekolah vokasional lain di Malaysia?

III. Perolehan kerja pelajar vokasional - Seksyen ini menilai peluang-peluang pekerjaan yang berpotensi diperolehi oleh pelajar-pelajar vokasional selepas menamatkan kursus vokasional mereka dengan mana-mana kolej / sekolah vokasional di Malaysia.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

A. Berikut adalah peluang pekerjaan yang berpotensi diperolehi oleh pelajar-pelajar vokasional selepas menamatkan kursus vokasional mereka dengan mana-mana kolej / sekolah vokasional di Malaysia:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Pelajar vokasional berjaya mendapatkan pekerjaan dengan mudah selepas menamatkan kursus vokasional di kolej-kolej atau sekolah-sekolah vokasional.	1	2	3	4	5
b	Pelajar vokasional menghadapi kesukaran mendapatkan pekerjaan selepas menamatkan kursus vokasional di kolej-kolej atau sekolah-sekolah vokasional.	1	2	3	4	5

c	Pelajar Vokasional biasanya dapat bekerja dalam industri yang berkaitan dengan bidang yang dipelajari di kolej-kolej atau sekolah-sekolah vokasional.	1	2	3	4	5
d	Gaji permulaan pelajar vokasional adalah di bawah RM1500 sebulan.	1	2	3	4	5
e	Pelajar vokasional memerlukan latihan atau pendidikan yang lebih tinggi untuk mendapatkan pekerjaan yang terjamin dengan gaji yang baik dalam pasaran kerja.	1	2	3	4	5
f	Pelajar vokasional memerlukan lebih pendidikan tinggi untuk maju dalam kerjaya.	1	2	3	4	5

B. Sila tulis di bawah peluang pekerjaan lain untuk pelajar vokasional selepas menamatkan kursus vokasional mereka tetapi tidak disebutkan di dalam senarai di atas.

C. Apakah peluang-peluang pekerjaan lain yang hanya akan diperolehi oleh pelajar-pelajar di kolej anda tetapi tidak oleh pelajar-pelajar di kolej-kolej / sekolah vokasional lain di Malaysia? Mengapa?

IV. Perkembangan pilihan dan keutamaan - Seksyen ini menilai keutamaan atau pilihan pelajar vokasional dalam memilih jalan perkembangan mereka selepas menamatkan kursus vokasional di mana-mana kolej / sekolah vokasional di Malaysia.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

1. Berikut adalah keutamaan atau pilihan pelajar vokasional dalam memilih haluan perkembangan mereka selepas menamatkan kursus vokasional di mana-mana kolej / sekolah vokasional di Malaysia:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Pelajar vokasional umumnya mempunyai aspirasi rendah untuk pendidikan tinggi di universiti atau institusi pengajian tinggi lain.	1	2	3	4	5
b	Pelajar vokasional amnya lebih suka untuk terus belajar untuk pendidikan peringkat tinggi di universiti atau institusi pengajian tinggi lain selepas menamatkan kursus vokasional mereka.	1	2	3	4	5
c	Pelajar vokasional amnya lebih suka bekerja selepas menamatkan kursus vokasional mereka.	1	2	3	4	5
d	Pelajar vokasional biasanya digalakkan untuk melanjutkan pelajaran yang lebih tinggi dengan universiti atau institusi pendidikan tinggi lain selepas menamatkan kursus vokasional mereka.	1	2	3	4	5
e	Pelajar vokasional biasanya digalakkan untuk mendapatkan pekerjaan selepas menamatkan kursus vokasional mereka.	1	2	3	4	5
f	Sokongan yang diperlukan untuk meneruskan pembelajaran ke tahap pendidikan tinggi (seperti pinjaman kewangan, asrama atau elaun hidup) disediakan untuk pelajar vokasional	1	2	3	4	5
g	Perkhidmatan kaunseling atau maklumat mengenai peluang untuk meneruskan pembelajaran ke tahap pendidikan tinggi (seperti maklumat mengenai universiti serta kursus yang ditawarkan) disediakan untuk pelajar vokasional.	1	2	3	4	5
h	Perkhidmatan kaunseling atau maklumat mengenai peluang pekerjaan dan maklumat kerjaya disediakan untuk pelajar vokasional.	1	2	3	4	5
i	Pelajar vokasional ditawarkan peluang untuk meneruskan pembelajaran ke tahap pendidikan tinggi oleh universiti-universiti atau institusi pengajian tinggi lain.	1	2	3	4	5
j	Pelajar vokasional ditawarkan pekerjaan atau peluang kerjaya oleh majikan.	1	2	3	4	5

2. Sila tulis di bawah lain-lain keutamaan atau pilihan pelajar vokasional ketika memilih haluan perkembangan mereka yang tidak disebutkan di dalam senarai di atas.

- C. Apakah jalan perkembangan yang disediakan untuk pelajar-pelajar kolej anda dan tidak tersedia untuk pelajar-pelajar di kolej-kolej vokasional yang lain? Mengapa?

- V. Faktor yang menggalakkan - Seksyen ini menilai faktor yang menggalakkan pelajar vokasional untuk meneruskan pembelajaran ke peringkat pendidikan tinggi selepas menamatkan kursus mereka dengan mana-mana kolej / sekolah vokasional di Malaysia.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- A. Berikut adalah faktor-faktor yang menggalakkan para pelajar vokasional untuk meneruskan pembelajaran ke peringkat pendidikan tinggi selepas menamatkan kursus mereka dengan mana-mana kolej / sekolah vokasional di Malaysia:

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Biasiswa	1	2	3	4	5
b	Pinjaman Pendidikan					
c	Sokongan kewangan untuk saraan hidup (elaun sara hidup, asrama percuma).	1	2	3	4	5

d	Sokongan keluarga (dorongan daripada ibu bapa atau ahli keluarga yang lain)	1	2	3	4	5
e	Pengaruh rakan sebaya (galakan rakan-rakan)	1	2	3	4	5
f	Kesedaran mengenai kepentingan dan manfaat pendidikan yang lebih tinggi.	1	2	3	4	5
g	Keinginan untuk mendapatkan pekerjaan yang lebih baik dengan kelayakan yang lebih tinggi.	1	2	3	4	5
h	Keinginan untuk mendapatkan gaji yang lebih tinggi dengan kelayakan yang lebih tinggi.	1	2	3	4	5
i	Keinginan untuk harga diri yang lebih tinggi dengan kelayakan yang lebih tinggi.	1	2	3	4	5
j	Keinginan untuk mendapatkan status sosial yang lebih baik dengan kelayakan yang lebih tinggi.	1	2	3	4	5
k	Mewujudkan garis panduan dan peluang untuk memperolehi pendidikan tinggi.	1	2	3	4	5
l	Akses yang lebih mudah kepada universiti atau institusi pengajian tinggi di sekitar kawasan kediaman pelajar.	1	2	3	4	5
m	Kerajaan atau dasar-dasar pendidikan yang menyenangkan pelajar memperolehi pendidikan tinggi	1	2	3	4	5
n	Sistem pendidikan tinggi lebih mesra dan lebih mudah diakses.	1	2	3	4	5
o	Adanya perkhidmatan kaunseling dan maklumat mengenai pendidikan yang lebih tinggi.	1	2	3	4	5
p	Program pendidikan tinggi atau kursus-kursus yang diminati pelajar vokasional mendorong mereka untuk meneruskan pengajian tinggi.	1	2	3	4	5
q	Pengetahuan yang berguna dan kemahiran yang dipelajari dalam pendidikan tinggi.	1	2	3	4	5
r	Cabaran yang dithadapi dalam kursus-kursus pendidikan tinggi atau program.	1	2	3	4	5
s	Galakan atau insentif oleh kerajaan atau Kementerian Pelajaran.	1	2	3	4	5

t	Kerjasama antara kolej vokasional dan universiti untuk mewujudkan peluang bagi pelajar vokasional untuk memperolehi pendidikan yang lebih tinggi di universiti.	1	2	3	4	5
u	Kerjasama antara kolej vokasional dan universiti untuk merekabentuk kursus atau program yang bersesuaian bagi pelajar vokasional.	1	2	3	4	5

- B. Sila tulis di bawah faktor-faktor lain yang menggalakkan pelajar vokasional untuk meneruskan pendidikan tinggi yang tidak disebutkan di dalam senarai di atas.**

VI. Faedah pendidikan tinggi: Seksyen ini menilai manfaat yang mungkin diperolehi oleh pelajar-pelajar vokasional dengan latar belakang sosioekonomi yang rendah jika mereka mendapat pendidikan tinggi.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- A. Berikut adalah manfaat yang mungkin diperolehi oleh pelajar-pelajar vokasional dengan latar belakang sosioekonomi yang rendah jika mereka mendapat pendidikan tinggi:**

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Pengetahuan dan kemahiran yang lebih baik.	1	2	3	4	5
b	Pekerjaan yang stabil dan terjamin.	1	2	3	4	5
c	Gaji lebih tinggi.	1	2	3	4	5
d	Tahap pendapatan yang lebih baik.	1	2	3	4	5
e	Prospek kerjaya yang lebih baik.	1	2	3	4	5

f	Gaya hidup yang lebih baik.	1	2	3	4	5
g	Status sosial yang lebih baik.	1	2	3	4	5
h	Nilai harga diri meningkat	1	2	3	4	5

- B. Sila tulis di bawah faedah lain yang tidak disebut di atas yang mungkin diperolehi oleh pelajar-pelajar vokasional dengan latar belakang sosioekonomi yang rendah jika mereka mendapat pendidikan tinggi.**

VII. Faktor-faktor penghindaran - Seksyen ini menilai faktor-faktor yang menghindari pelajar vokasional daripada meneruskan pembelajaran ke tahap pengajian tinggi selepas menamatkan kursus mereka dengan mana-mana kolej / sekolah vokasional di Malaysia

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- A. Di bawah adalah faktor-faktor yang menghindari pelajar vokasional daripada meneruskan pembelajaran ke tahap pengajian tinggi selepas menamatkan kursus mereka dengan mana-mana kolej / sekolah vokasional di Malaysia:**

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Masalah kewangan (misalnya, tidak mampu membayar yuran tuisyen atau perbelanjaan lain yang ditanggung akibat pengajian tinggi)	1	2	3	4	5
b	Aspirasi rendah terhadap pendidikan tinggi.	1	2	3	4	5
c	Gagal untuk melihat kepentingan dan manfaat pendidikan tinggi.	1	2	3	4	5

d	Pengaruh dari keluarga dan persekitaran (misalnya, pelajar yang dikelilingi oleh jiran-jiran atau saudara mara yang tidak berpendidikan tinggi).	1	2	3	4	5
e	Kekurangan maklumat atau kaunseling mengenai pendidikan tinggi.	1	2	3	4	5
f	Kekurangan minat untuk memperolehi pendidikan yang lebih tinggi.	1	2	3	4	5
g	Kurang keyakinan untuk menghadapi dan melengkapkan pendidikan yang lebih tinggi.	1	2	3	4	5
h	Kekurangan peluang untuk memperolehi pendidikan peringkat yang lebih tinggi (misalnya tidak diterima oleh universiti untuk pengajian Ijazah Sarjana Muda).	1	2	3	4	5
i	Kesukaran untuk mendapat akses ke institusi pengajian tinggi (misalnya universiti yang terletak di negeri yang berlainan atau jauh dari kawasan perumahan).	1	2	3	4	5
j	Pengetahuan dan latihan yang tidak serasi antara program pendidikan vokasional dan program pengajian tinggi menyebabkan pelajar vokasional sukar untuk mengikuti pembelajaran pendidikan tinggi.	1	2	3	4	5
k	Gaya pengajaran yang berbeza di universiti atau institusi pengajian tinggi lain yang menyebabkan pembelajaran sukar (misalnya, ajaran bilik darjah dan kajian teori).	1	2	3	4	5
l	Sistem penilaian yang berbeza di universiti atau institusi pengajian tinggi lain (misalnya peperiksaan dan tugas).	1	2	3	4	5
m	Kadar keciciran yang tinggi di antara bekas pelajar vokasional dari institut pengajian tinggi tidak menggalakkan pelajar baru daripada memohon.	1	2	3	4	5
n	Kekurangan kerjasama antara kolej vokasional dan institusi pengajian tinggi untuk mewujudkan peluang bagi pelajar vokasional untuk maju untuk pendidikan peringkat yang lebih tinggi.	1	2	3	4	5
o	Kekurangan kerjasama antara kolej vokasional dan universiti institusi yang mewujudkan laluan bagi pelajar vokasional untuk maju untuk pendidikan peringkat yang lebih tinggi.	1	2	3	4	5

p	Kekurangan polisi kerajaan atau pendidikan untuk menggalak pelajar vokasional meneruskan pembelajaran ke pendidikan tinggi.	1	2	3	4	5
q	Polisi kerajaan atau pendidikan yang tidak menggalakkan bagi pelajar vokasional untuk melanjutkan pendidikan yang lebih tinggi.	1	2	3	4	5
r	Polisi kerajaan atau pendidikan yang menghalang universiti atau institusi pengajian tinggi lain daripada menerima pelajar vokasional untuk pendidikan peringkat yang lebih tinggi.	1	2	3	4	5

- B. Sila tulis di bawah faktor-faktor lain yang menghindari pelajar vokasional dengan latar belakang sosioekonomi rendah daripada meneruskan pendidikan tinggi tetapi tidak disebutkan di dalam senarai di atas.**

VIII. Masalah yang mungkin dihadapi pelajar vokasional di peringkat pendidikan tinggi: Seksyen ini menilai masalah atau kesukaran yang mungkin dihadapi oleh pelajar vokasional untuk maju dalam pendidikan tinggi di universiti atau institusi pengajian tinggi lain.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- A. Berikut adalah masalah atau kesukaran mungkin dihadapi oleh pelajar-pelajar vokasional untuk maju dalam pendidikan tinggi di universiti atau institusi pengajian tinggi lain:**

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Mungkin menghadapi masalah menangani beban pembelajaran di universiti atau institusi pengajian tinggi lain.	1	2	3	4	5
b	Mungkin menghadapi masalah menangani tekanan emosi yang disebabkan oleh pembelajaran di peringkat pengajian tinggi	1	2	3	4	5

c	Mungkin menghadapi masalah menangani tekanan emosi kerana berjauhan dari rumah.	1	2	3	4	5
d	Mungkin menghadapi masalah menyesuaikan diri dengan cara ajaran kelas tradisional di universiti atau institusi pengajian tinggi lain.	1	2	3	4	5
e	Mungkin menghadapi masalah menyesuaikan diri dengan sistem penilaian akademik (misalnya tugas dan peperiksaan) di universiti atau institusi pengajian tinggi lain.	1	2	3	4	5

- B. Sila tulis di bawah masalah-masalah lain mungkin dihadapi oleh pelajar vokasional untuk maju dalam pendidikan tinggi.**

IX. Cadangan - Seksyen ini menilai pendapat atau idea untuk mengatasi halangan-halangan yang dihadapi oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi rendah ketika mencapai tahap pendidikan tinggi.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

- A. Berikut adalah cadangan saya untuk mengatasi halangan-halangan yang dihadapi oleh pelajar-pelajar vokasional dengan latar belakang sosioekonomi rendah untuk menjadikan pendidikan tinggi lebih mudah diakses:**

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Untuk memberi bantuan kewangan (iaitu, biasiswa, pinjaman pelajaran, elaun hidup).	1	2	3	4	5
b	Jaminan peluang pekerjaan setelah tamat pengajian pendidikan tinggi.	1	2	3	4	5

c	Menyediakan lebih banyak maklumat dan kaunseling mengenai peluang memperolehi pengajian tinggi dan program-program pengajian tinggi (misalnya, universiti manakah yang menerima pelajar vokasional untuk kajian Sarjana Muda Ijazah atau apa kursus pengajian ijazah tinggi yang disediakan untuk pelajar vokasional).	1	2	3	4	5
d	Membuka jalan kepada pelajar vokasional untuk memperolehi pendidikan tinggi (misalnya peluang untuk belajar Diploma atau kursus-kursus Ijazah Sarjana Muda dengan universiti atau institusi pendidikan tinggi lain).	1	2	3	4	5
e	Dasar pelajaran yang menjadikan pendidikan tinggi lebih mudah diakses oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi yang rendah.	1	2	3	4	5

B. Sila tulis di bawah cadangan yang lain untuk mengatasi halangan-halangan yang dihadapi oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi yang rendah.

X. Peranan Pihak Berkepentingan: Seksyen ini menilai peranan dan tanggungjawab pihak-pihak berkepentingan untuk menyediakan peluang pendidikan tinggi kepada pelajar vokasional selepas menamatkan kursus mereka di kolej-kolej / sekolah-sekolah vokasional.

(Sila tandakan (✓) kotak yang berkenaan dan tulis komen di tempat yang ditunjukkan)

A. Apakah universiti atau institusi pendidikan tinggi lain boleh lakukan untuk menggalakkan pelajar vokasional untuk melanjutkan pendidikan ke tahap yang lebih tinggi?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Untuk menawarkan lebih banyak peluang untuk pelajar vokasional.	1	2	3	4	5
b	Memberi lebih pengiktirafan dan penerimaan pensijilan vokasional.	1	2	3	4	5

c	Untuk membantu kolej vokasional atau sekolah-sekolah dalam membangunkan program pengajian] tinggi.	1	2	3	4	5
d	Memberi maklumat lanjut dan perkhidmatan kaunseling tentang program-program pengajian tinggi dan peluang yang terbuka kepada pelajar-pelajar vokasional.	1	2	3	4	5
e	Untuk merekabentuk struktur kursus dan memperkenalkan teknik pengajaran yang sesuai dengan minat dan keperluan pelajar vokasional	1	2	3	4	5

B. Sila tulis di bawah tindakan lain universiti atau institusi pendidikan tinggi lain boleh lakukan untuk menggalakkan pelajar vokasional melanjutkan pembelajaran ke tahap pendidikan tinggi.

C. Apa yang boleh kolej vokasional atau sekolah vokasional lakukan untuk menggalakkan pelajar vokasional untuk melanjutkan pembelajaran ke tahap pendidikan tinggi?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Untuk bekerjasama dengan universiti atau institusi pengajian tinggi lain dalam mewujudkan peluang untuk pelajar vokasional.	1	2	3	4	5
b	Menawarkan program-program pendidikan tinggi (tahap Sarjana Muda dan Sarjana) di kolej-kolej vokasional.	1	2	3	4	5
c	Untuk menaik taraf program vokasional dan membuat kursus yang setaraf dengan program-program yang ditawarkan di universiti atau institusi pengajian tinggi lain.	1	2	3	4	5
d	Untuk menggalakkan kepentingan, faedah dan keberkesanan pendidikan tinggi di kalangan pelajar vokasional.	1	2	3	4	5
e	Meningkatkan imej pendidikan vokasional.	1	2	3	4	5

1. Sila tulis di bawah apa lagi yang boleh kolej vokasional atau sekolah vokasional lakukan untuk menggalakkan pelajar vokasional untuk melanjutkan pembelajaran ke tahap pendidikan tinggi.

- E. Apa yang kerajaan boleh lakukan untuk menggalakkan graduan VET untuk meneruskan pembelajaran ke tahap pendidikan tinggi?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Menyediakan bantuan kewangan kepada pelajar-pelajar vokasional untuk melanjutkan pembelajaran ke tahap pendidikan tinggi.	1	2	3	4	5
b	Mengenakan polisi menjadikan pendidikan tinggi lebih mudah diakses oleh pelajar-pelajar vokasional.	1	2	3	4	5
c	Mengenakan polisi bagi universiti atau institusi pendidikan tinggi lain untuk menyediakan peluang kepada pelajar-pelajar vokasional.	1	2	3	4	5
d	Mengenakan polisi yang menggalakkan kerjasama antara kolej vokasional dan universiti untuk mewujudkan peluang untuk pelajar vokasional.	1	2	3	4	5
e	Menyediakan insentif dan memberi bantuan kepada kolej vokasional untuk membangunkan program pendidikan tinggi.	1	2	3	4	5
f	Menyediakan insentif dan galakan kepada syarikat-syarikat untuk menaja pekerja bersijil vokasional untuk melanjutkan pembelajaran ke tahap pendidikan tinggi.	1	2	3	4	5
g	Meningkatkan imej pendidikan vokasional.	1	2	3	4	5

- F. Sila tulis di bawah apa lagi yang kerajaan boleh lakukan untuk menggalakkan pelajar vokasional untuk melanjutkan pembelajaran ke tahap pendidikan tinggi.

G. Apa yang boleh majikan lakukan untuk menggalakkan graduan VET untuk meneruskan pembelajaran ke tahap pendidikan tinggi?

		Sangat Tidak Setuju	Tidak Setuju	Neutral	Setuju	Sangat Setuju
a	Untuk memberikan bantuan kewangan dan menaja pelajar vokasional ke peringkat pengajian tinggi.	1	2	3	4	5
b	Memberi peluang pekerjaan yang lebih baik kepada pelajar vokasional yang berkecayaan pendidikan tinggi.	1	2	3	4	5
c	Menyediakan insentif untuk pekerja bersijil vokasional untuk melanjutkan pelajaran ke tahap pengajian tinggi.	1	2	3	4	5
d	Untuk bekerjasama dengan kolej-kolej vokasional dan institusi pengajian tinggi bagi mempromosikan manfaat, kepentingan dan keberkesanan pendidikan tinggi.	1	2	3	4	5
e	Untuk membantu kolej vokasional dalam meningkatkan imej pendidikan vokasional (supaya ia lebih diterima oleh institusi pengajian tinggi dan juga masyarakat umum)	1	2	3	4	5

H. Sila tulis di bawah apa lagi yang boleh majikan lakukan untuk menggalakkan pelajar vokasional untuk melanjutkan pembelajaran ke tahap pendidikan tinggi.

Terima kasih kerana meluangkan masa untuk menjawab soalan-soalan ini.

Appendix 3A Interview Schedule for CAs at VET Institutions

1. Please describe the general background of students undergoing vocational education and training courses in your institution? (How do you describe the biography or backgrounds of vocational students, i.e. family income, parents education level or professions, etc?)
2. Please describe the general academic performance of vocational students, How do the performances of students from low socioeconomic groups differ from the others?
3. What do you think Vocational education can do for the students? i.e. get a job, earning good salary, entrepreneur skills?
4. Do you think a vocational certification helps students in improving their lives or living standards? What other goods do you think vocational education/certificate can do for students?
5. The general progression options of vocational students after completing vocational education and training courses at vocational school or colleges. Work or continue studies?
6. How do the options of students from low socioeconomic groups differ from the others?
7. What are your opinions about higher level education for vocational students? Do you think HE is important to vocational students?
8. Please describe the importance and relevance of higher education to vocational students.
9. Do you think higher education certification helps improving lives of vocational graduates/students?
10. What do you think are the general higher education barriers encountered by vocational students? How do the barriers of students with low socioeconomic background differ from the others?
11. What do you think are the contributing factors causing the barriers to higher education encountered by vocational students, especially those with low socioeconomic background.
12. What do you think are the assistance required by students to overcome barriers to higher education?
13. Do you think the government is doing anything useful to help overcoming the barriers for vocational students to progress for higher education? What do you think they should do?
14. Do you think the universities are doing anything to make higher education accessible to vocational students? What do you think they should do?
15. Do you think vocational colleges are doing anything to make higher education more accessible to vocational students? What do you think they should do?
16. Do you think vocational students are working hard enough to get ready for higher education? What do you think they should do?
17. What role can vocational college play to help vocational students in attaining higher education?
18. What role can higher education institution or university play to help vocational students in attaining higher education?
19. What role can the government play to help vocational students in attaining higher education?

20. What can vocational students do to help themselves in attaining higher education?
21. What are the current vocational institution's or government's strategies in helping vocational students with low socioeconomic background in attaining higher education? What are the future plans or strategies in place?
22. What are your recommendations to help vocational students with low socioeconomic background in attaining higher education?

Appendix 3B Interview Schedule for VET-LSEG Students

1. Please explain the courses that you are currently undergoing with the vocational college or vocational school.
2. What are you planning to do after completing your studies with the vocational college or vocational school here?
3. Do you think you have learned enough to go out to work?
4. Do you think you can get a good employment with a vocational certificate?
5. Do you think vocational certificates can help improving your current life styles?
6. What do you think about higher education at university? Do you think it is necessary for people to go for higher education at university?
7. Do you think higher education is important or relevant to you?
8. What do you think HE can do for you?
9. Are your friends studying in university? Do you think university is good for them? Why?
10. Do you want to study in university? Why?
11. Are your parents supportive for you to for HE? Do they encourage you to study or to work?
12. Do you think higher education can help you get better employment or better salary than vocational certificate? Why?
13. Would you want to progress for higher education after completing your courses here? Why?
14. Do you think it is difficult to go for higher education? Why?
15. What do you think are the reasons making higher education difficult to attain?
16. Will your parents or family members support your decision to continue for higher education? Why?
17. Do you think lessons/learning in university difficult or boring?
18. Do you think the assessment style in university (i.e. assignments and examinations) is difficult or boring?
19. Do you think the teaching style in university (i.e. class lectures and tutorials) are boring or difficult?
20. Are there any universities near to your residential areas? Do you think the (far) distance of university from your house is an issue for you to go for HE?
21. What kind of assistances can make higher education easier to attain?
22. What do you think the university can do to make higher education easier to attain?
23. What do you think the government can do to make higher education easier to attain?
24. What do you think the vocational colleges or vocational schools can do to make higher education easier to attain?

**Appendix 3C Interview Schedule for School Leaders/CAs at HE Institutions (with
Progression Pathways)**

1. Please describe the current higher education system in Malaysia, i.e. operations, role and responsibilities.
2. Please describe the vocational education and training system in Malaysia, i.e. operations, role and responsibilities.
3. Are there any difference between higher education and vocational education systems in Malaysia? If yes, what are the differences?
4. Do you think he differences between higher education and vocational education be reconciled? How?
5. What are your opinions about vocational students graduated with vocational qualifications?
6. What are your opinions about vocational students progressing for higher education at university or other higher education institutions?
7. Do you think vocational students can cope with the higher education at university level? What do you think could be the problems? How would you suggest to overcome such problems?
8. What do you think are the barriers stopping vocational students progressing for higher education? Are the barriers greater for those from low socioeconomic background?
9. What do you think are the contributing factors causing barrier to higher education to vocational students? Are there different factors forming the barrier to vocational students with low socioeconomic background?
10. Do you think the government is doing anything useful to help overcoming the barriers for vocational students to progress for higher education? What do you think they should do?
11. Do you think the universities are doing anything to make higher education accessible to vocational students? What do you think they should do?
12. Do you think vocational colleges are doing anything to make higher education more accessible to vocational students? What do you think they should do?
13. Do you think vocational students are working hard enough to get ready for higher education? What do you think they should do?
14. What are your suggestions to overcome the barriers to higher education encountered by vocational students? Do your suggestions differ than those given to vocational students with low socioeconomic background?
15. I understand the university provides progression route for vocational students graduating from vocational colleges, what have the university done to make this possible?
16. What are the progression routes available in this institution for the vocational students? In what courses? What are the more popular courses among vocational students?
17. What are the extra supports required to make the progression or transition of vocational students into higher education successful?
18. How have the vocational students performed after progressing for higher level education?

19. What are the general problems or difficulties encountered by the vocational students after enrolling for higher level education?
20. Are there any extra supports provided by the university to help vocational students coping with their higher education studies? If yes, what are the extra supports given?
21. What are the successful rates of vocational students completing their higher education in this university?
22. Generally, what could the higher education do to help vocational students with low socioeconomic background to overcome barriers to higher education?
23. What could the vocational institutions do to help vocational students with low socioeconomic background to overcome barriers to higher education?
24. What could government do to help vocational students with low socioeconomic background to overcome barriers to higher education?
25. What should the vocational students with low socioeconomic background do to make higher education more accessible to them?

**Appendix 3D Interview Schedule for School Leaders/CAs at HE Institutions (No
Progression Pathways)**

1. Please describe the current higher education system in Malaysia, i.e. operations, role and responsibilities.
2. Please describe the vocational education and training system in Malaysia, i.e. operations, role and responsibilities.
3. Are there any difference between higher education and vocational education systems in Malaysia? If yes, what are the differences?
4. Do you think the differences between higher education and vocational education be reconciled? How?
5. What are your opinions about vocational students graduated with vocational qualifications?
6. What are your opinions about vocational students progressing for higher education at university or other higher education institutions?
7. What do you think are the barriers stopping vocational students progressing for higher education? Are the barriers greater for those from low socioeconomic background?
8. What do you think are the contributing factors causing barrier to higher education to vocational students? Are there different factors forming the barrier to vocational students with low socioeconomic background?
9. What are the main reasons that the university is not providing progression route for vocational students from vocational colleges?
10. Is the university considering to provide progression route for vocational students in future? If no, why? If yes, what kind of course would be allowed for progression? What are the strategies to make the progression successful?
11. What are your suggestions to overcome barriers to higher education encountered by vocational students? Do your suggestions differ than those given to vocational students with low socioeconomic background?
12. Do you think the government is doing anything useful to help overcoming the barriers for vocational students to progress for higher education? What do you think they should do?
13. Do you think the universities are doing anything to make higher education accessible to vocational students? What do you think they should do?
14. Do you think vocational colleges are doing anything to make higher education more accessible to vocational students? What do you think they should do?
15. Do you think vocational students are working hard enough to get ready for higher education? What do you think they should do?
16. What could the higher education do to help vocational students with low socioeconomic background to overcome barriers to higher education?
17. What could the vocational institutions do to help vocational students with low socioeconomic background to overcome barriers to higher education?

18. What could government do to help vocational students with low socioeconomic background to overcome barriers to higher education?
19. What should the vocational students with low socioeconomic background do to make higher education more accessible to them?

Appendix 3E Interview Schedule for Representative from MOE

1. Please describe the current higher education system in Malaysia, for example the operations, the role and responsibilities.
2. Please describe the current vocational education system in Malaysia, for example the operations, the role and responsibilities.
3. What do you think are the difference between vocational education and higher education?
4. What is the gap between vocational education and higher education? How would you suggest to close the gap between the two systems?
5. Do you think vocational education qualifications are sufficient for an individual to survive in today's world?
6. How do you compare people with vocational qualifications and people with higher education qualifications? Do you think people with vocational qualifications achieve lower than those with higher education qualifications?
7. What is your opinion about higher education? Do you think it is important for every individual to obtain higher education? Why?
8. How do you describe the biography or backgrounds of vocational students, i.e. family income, parents education level or professions, etc?
9. Do you think it is necessary for vocational students to progress for higher education? Why?
10. Do you think vocational students see vocational training as a way to improve lives?
11. Please explain the current policies in relation to improving vocational students' participation in higher education, are those policies equally beneficial to those from low socioeconomic groups?
12. Please describe the strategies in relation to improving vocational students' participation in higher education, are those policies equally beneficial to those from low socioeconomic groups?
13. Do you think vocational students facing barriers or difficulties progressing for higher education after completing their courses with vocational colleges in Malaysia? If yes, what are the barriers or difficulties that these students facing? Do vocational students with low socioeconomic background face greater barriers or difficulties progressing for higher education?

14. What do you think are the reasons or factors contributing to these barriers or difficulties that causing problems for vocational students with low socioeconomic background to progress for higher education?
15. What are your suggestions to overcome these barriers or difficulties in order to make higher education more attainable to vocational students? Are the suggestions different from those given for the vocational students with low socioeconomic background?
16. Do you think the government is doing anything useful to help overcoming the barriers for vocational students to progress for higher education? What do you think they should do?
17. Do you think the universities are doing anything to make higher education accessible to vocational students? What do you think they should do?
18. Do you think vocational colleges are doing anything to make higher education more accessible to vocational students? What do you think they should do?
19. Do you think vocational students are working hard enough to get ready for higher education? What do you think they should do?
20. What could the Ministry of Higher Education do to help overcoming the barriers to higher education for vocational students with low socioeconomic background?
21. Are there any policies or strategies currently imposed to make higher education more attainable to vocational students? Would those policies and strategies be beneficial to vocational students with low socioeconomic background too?
22. What are the future plans and policies to help vocational students in attaining higher education? Would those policies or strategies be equally beneficial to vocational students with low socioeconomic background?
23. In your personal opinion, what do you think the government should do to help the vocational students with low socioeconomic background to progress for higher education at university or other higher education institutions?
24. In your personal opinion, what do you think the higher education institutions in the country should do to help the vocational students with low socioeconomic background to progress for higher education at university or other higher education institutions?
25. In your personal opinion, what do you think the vocational institutions in the country should do to help the vocational students with low socioeconomic background to progress for higher education at university or other higher education institutions?

26. What do you think the vocational students should do to improve their chance to progress for higher education? How would these advices differ from those for the vocational students with low socioeconomic background?

Appendix 4 Investigation Schedule for Case Study

Case Study Investigation Schedule

No	Descriptions	Check / Remarks / Note for further investigation
Stage 1: Existing organization structure and primary operations		
A. Institution background and development		
1	General information about the university	
	a. Size of the university and number of schools	
	b. Student number	
	c. Mission, vision, policies and strategies	
	d. Development history and current operations	
	e. Future development plans and strategies	
	f. Others	
B. Training premises and training facilities		
1	Training premises	
	a. Distance from VET-LSEG students' home, (i.e. do students need to travel far? are most students staying in hostel far away from home?)	
	b. Can hostel easily obtained by VET-LSEG?	
	c. Conduciveness (i.e. of learning premises, hostels, prayer room, etc)	
	d. Safety	
	e. Others	
2	Training Facilities	
	a. Availability of necessary training facilities and equipment.	
	b. Condition of the necessary training	

	facilities and equipment.	
	c. Extra facilities and equipment that promote better and more effective learning.	
	d. Are the necessary training facilities and equipment provided for free?	
	e. Any shortage of training facilities and equipment? If yes, what are the plans and strategies to resolve the problems?	
	f. Others	
C. Training programmes and courses		
1	The programmes being offered for progression:	
	a. Why are these programmes being offered for progression to vocational graduates?	
	b. What are the HE programmes not being offered for progression to vocational graduates at the institution.	
	c. Others	
2	The more popular programmes among vocational students or VET-LSEG for progression:	
	a. The special features about these programmes.	
	b. Others	
3	The programmes that are not offered for progression	
	a. The special features of the programmes making them impossible for progression.	
	b. Others	
D. VET-LSEG students at the institution		
1	Marketing and promotional efforts (to make known of the progression route or training courses among vocational students)	
	a. Marketing materials.	
	b. Promotional activities	

	c. Others	
	Admission and evaluation	
	a. Standard operating procedures.	
	b. Policies and rules.	
	c. Others	
2	Academic performances after transition	
3	General problems or difficulties encountered on higher level learning	
4	Other possible barriers after transition	
5	Others	
E. Supports for VET-LSEG students		
1	Financial supports, by whom, how?	
2	Learning supports, by whom, how?	
3	Teaching supports, by whom, how?	
4	Other supports, what? How?	
F Other Relevant Observations		
1	Barrier	
2	Strategies to be suggested to overcome barrier	
Stage 2: Strengths and advantages		
A. In terms of institution background and development		
1	How do the background and structure of the institution contribute to its strengths and advantages in admitting VET-LSEG students and offering VET related HE programmes:	
	g. History	
	h. Mission, vision, policies and strategies	

	i. Development history and current operations	
	j. Future development plans and strategies	
	k. Others related observations	
B. Training premises and training facilities		
1	How do the premises and facilities of the institution contribute to its strengths and advantages in admitting VET-LSEG students and offering VET related HE programmes:	
	f. Distance from VET-LSEG students' home, (i.e. do students need to travel far? are most students staying in hostel far away from home?)	
	g. Can hostel easily obtained by VET-LSEG?	
	h. Conduciveness (i.e. of learning premises, hostels, prayer room, etc)	
	i. Safety	
	j. Others related observations	
2	Training Facilities	
	g. Availability of necessary training facilities and equipment.	
	h. Condition of the necessary training facilities and equipment.	
	i. Extra facilities and equipment that promote better and more effective learning.	
	j. Are the necessary training facilities and equipment provided for free?	
	k. Any shortage of training facilities and equipment? If yes, what are the plans and strategies to resolve the problems?	
	l. Others related observations	
C. Training programmes and courses		
1	How do the HE programmes and courses of the institution contribute to its strengths and advantages in admitting VET-LSEG students and offering VET related HE	

	programmes:	
	d. What type of HE programmes suitable for progression of VET-LSEG students?	
	e. Why are these programmes being offered for progression to vocational graduates?	
	f. The special features that makes the offered programmes possible to be offered for progression of VET-LSEG students	
	g. Others observations related to strengths of the programmes and courses offered in the institution.	
D. VET-LSEG students at the institution		
1	What Marketing and promotional strategies or efforts (to make known of the progression route or training courses among vocational students) contributed to strengths and advantages of the institutions, especially in promoting the programmes to VET-LSEG students.	
	d. Marketing materials.	
	e. Promotional activities	
	f. Others observations related to strengths and advantages of the institution	
2	What admission strategies and efforts contributed to strengths and advantages of the institutions, especially in admitting VET-LSEG students for HE studies.	
	d. Standard operating procedures.	
	e. Policies and rules.	
	f. Others observations related to strengths and advantages of the institution	
E. Supports for VET-LSEG students		
1	What support system available in the institution contributed to its effectiveness in admitting VET-LSEG students for HE studies and in offering VET related HE programmes.	
i	Financial supports, by whom, how?	
ii	Learning supports, by whom, how?	
ii	Teaching supports, by whom, how?	

iv	Other supports, what type? How was it offered? By whom?	
F. Collaborations and alliances of the university (in relation to vocational education and trainings)		
1	Types of collaborations or alliances (i.e. with vocational colleges, government, etc) contributed to the strengths and weaknesses of the institution:	
	a. How did this collaboration benefit the institution?	
	b. How did this collaboration benefit the VET-LSEG students?	
	c. How did this collaboration advantage the institution in admitting VET-LSEG students for HE studies?	
	d. How did this collaboration advantage the institution in offering VET related HE programmes?	
	e. Other related observations	
2	How did the collaboration affect the VET-LSEG students at the institution?	
3	How would the collaboration affect the VET-LSEG students that are potentially admitted by the institution for HE studies?	
4	How did the collaborations affect the progression and learning of VET-LSEG students at the institution?	
5	How could this collaboration be improved, in term of assisting the institution in admitting VET-LSEG students and in offering VET related HE programmes?	
6	Could this collaboration be duplicated by other HE institutions? How?	
5	Other related observations	
G. Role of other stakeholders contributed to the strengths and advantages of the institution, in term of admitting VET-LSEG students for HE studies and offering VET related HE programmes.		

1	Government – Ministry of Higher Education and others.	
2	Higher education institutions	
3	Vocational colleges or vocational schools	
4	VET-LSEG	
5	Others	
H	Other Relevant Observations	
Stage 3: Challenges		
A. How did the institution's background and development contribute to the institution's challenges in offering VET related HE programmes and in admitting VET-LSEG students for HE studies?		
1	In term of:	
	l. Size of the university and number of schools	
	m. Mission, vision, policies and strategies	
	n. Development history and current operations	
	o. Future development plans and strategies	
	p. Others relevant observations	
B. How did the institution's training premises and training facilities contribute to the institution's challenges in offering VET related HE programmes and in admitting VET-LSEG students for HE studies?		
1	In term of training premises	
	k. Distance from VET-LSEG students' home, (i.e. do students need to travel far? are most students staying in hostel far away from home?)	
	l. Can hostel easily obtained by VET-LSEG?	
	m. Conduciveness (i.e. of learning premises, hostels, prayer room, etc)	
	n. Safety	

	o. Others	
2	In term of training Facilities	
	m. Availability of necessary training facilities and equipment.	
	n. Condition of the necessary training facilities and equipment.	
	o. Extra facilities and equipment that promote better and more effective learning.	
	p. Are the necessary training facilities and equipment provided for free?	
	q. Any shortage of training facilities and equipment? If yes, what are the plans and strategies to resolve the problems?	
	r. Others	
C. How did the institution's training programmes and courses contribute to the institution's challenges in offering VET related HE programmes and in admitting VET-LSEG students for HE studies?		
1	What cause the challenges?	
2	What measures and strategies have been implemented to overcome the challenge?	
3	Stakeholders that could make contribution to overcome the challenge. How.	
4	Other relevant observations	
D. Operational and administrative challenges encountered by the institution.		
1	What type of challenges encountered by the institution in its marketing and promotional efforts (to make known of the progression route or training courses among vocational students)?	
	g. Marketing materials.	
	h. Promotional activities	
	i. Approaching the VET-LSEG students	
	j. What types of measure or strategy have been implemented to overcome the challenge? How? Effectiveness? How	

	could the strategy be improved?	
	k. Other relevant observations	
	What type of challenges encountered by the institution in offering VET related He programmes?	
	g. Challenges.	
	h. Measures or strategies implemented to overcome the challenge.	
	i. Other relevant observations	
2	What type of challenges encountered by the institution in admitting Vet-LSEG students for HE studies?	
	a. Challenges.	
	b. Measures or strategies implemented to overcome the challenge.	
	c. Other relevant observations	
D. VET-LSEG students at the institution		
1	General challenges encountered by VET-LSEG students in coping with HE studies at the institution.	
2	Strategies implemented to tackle the students' challenge in coping with HE studies.	
3	General challenges encountered by VET-LSEG students in coping with emotional stress during course of study at the institution.	
4	Strategies implemented to tackle the challenge of students' emotional stress.	
5	Other challenges encountered by VET-LSEG students at the institution.	
E. Supports for VET-LSEG students		
What are the challenges encountered by the institution in offering supports to VET-LSEG students? In term of:		
1	Financial supports, and what measure or strategies have been implemented to tackle the challenge?	

2	Learning supports, and what measure or strategies have been implemented to tackle the challenge?	
3	Learning facilities, and what measure or strategies have been implemented to tackle the challenge?	
4	Other relevant observations	
F. What are the challenges encountered by the institution in establishing and maintaining collaborations and alliances with other stakeholders		
1	Industrial partners (types of collaboration and challenges and strategies implemented to tackle the challenge)	
2	VET institutions (types of collaboration and challenges and strategies implemented to tackle the challenge)	
3	Government instructions (types of collaboration and challenges and strategies implemented to tackle the challenge)	
4	Other HE institutions (types of collaboration and challenges and strategies implemented to tackle the challenge)	
5	Other relevant observations	
G. Role of other stakeholders to assist the institution in overcoming challenge in offering VET related HE programmes in Malaysia.		
1	Government (type of challenge and type of assistance required).	
2	Higher education institutions (type of challenge and type of assistance required).	
3	VET institutions (type of challenge and type of assistance required).	
4	Industrial partners (type of challenge and type of assistance required).	
5	Other stakeholders (type of challenge and type of assistance required).	
H. Role of other stakeholders to assist the institution in overcoming challenge in admitting VET-LSEG students for HE studies in Malaysia.		

1	Government (type of challenge and type of assistance required).	
2	Higher education institutions (type of challenge and type of assistance required).	
3	VET institutions (type of challenge and type of assistance required).	
4	Industrial partners (type of challenge and type of assistance required).	
5	Other stakeholders (type of challenge and type of assistance required).	
I	Other challenges observed	

Appendix 5 Selection Criteria for Sampling/Respondents

Selection criteria for Interview Respondents

No	Category	Selection Criteria
Phase I-Questionnaires		
1	Chief Administrators from Vocational Colleges or Vocational Schools.	<ol style="list-style-type: none"> 1. Must not be younger than 18 years old. 2. Must be an employee of the Vocational College or Vocational School. 3. Must be the person knowledgeable about student background, programme operations, student performance, education policies and future development of the institution.
2	Students with vocational colleges	<ol style="list-style-type: none"> 1. Must not be younger than 16 years old. 2. Must be a student currently undergoing training courses at the vocational college or vocational school. 3. Must have completed at least one full year of the vocational course at the vocational college or vocational school. 4. Preferably from low socioeconomic background with household income not more than RM3000 per month.
Phase II-Semi-structured Interview		
No	Category	Selection Criteria
1	Chief Administrators of Vocational College or Vocational School.	<ol style="list-style-type: none"> 1. Must not be younger than 18 years old. 2. Must be an employee of the Vocational College or Vocational School. 3. Must be the person knowledgeable about student background, programme operations, student performance, education policies and future development of the institution.
2	Students with the vocational college or vocational school.	<ol style="list-style-type: none"> 1. Must not be younger than 16 years old. 2. Must have completed at least one full year of the vocational course at the vocational college or vocational school. 3. Must be a student currently undergoing training courses at the vocational college or vocational school. 4. Preferably from low socioeconomic background

		with household income not more than RM3000 per month.
3	Registrars or Person In-Charge of VET progression from university or higher education institution.	<ol style="list-style-type: none"> 1. Must not be younger than 18 years old. 2. Must be an employee of the university or higher education institution selected. 3. Must be the person knowledgeable about student background, programme operations, student performance, education policies and future development of the institution.
4	Representatives from Ministry of Higher Education-Division of Higher Education.	<ol style="list-style-type: none"> 1. Must not be younger than 18 years old. 2. Must be an employee of the Ministry of Higher Education-Division of Higher Education. 3. Must be the person in-charge of administration and development of higher education system in Malaysia. 4. Must be the person knowledgeable about education policies and development strategies of TVET system in the country.
5	Representatives from Ministry of Higher Education-Division of Technical and Vocational Education (TVET).	<ol style="list-style-type: none"> 1. Must not be younger than 18 years old. 2. Must be an employee of the Ministry of Higher Education-Division of Technical and Vocational Education. 3. Must be the person in-charge of administration and development of TVET system in Malaysia. 4. Must be the person knowledgeable about education policies and development strategies of TVET system in the country.

Appendix 6A Introduction Letter for Questionnaires to CAs at VET Institutions

Introduction Letter for Questionnaires Survey

(Phase I Category A: Chief Administrators of Vocational Colleges)

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by completing a Questionnaire which should take no more than 30 minutes to finish. In the questionnaire, you will be asked to provide your opinions about the education system in Malaysia, the higher education barriers encountered by vocational students and suggestions to overcome such barriers.

Your participation is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Upon completion of the research, all questionnaires will be securely stored at the University of Tasmania. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. While contacting the Executive Officer, you will need to quote [H0013585]. The Executive Officer at HREC is the person nominated to receive complaints from research participants

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

- i. Dr. David Moltow via email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser via email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham via email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Yours sincerely,

Chong Choon Lin
PhD Candidate

Appendix 6B Introduction Letter for Questionnaires to VET-LSEG Students (18 year old and above)

Introduction Letter for Questionnaires Survey
(Phase I Category B: Vocational students 18 years old and above)

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by completing a Questionnaire which should take no more than 30 minutes to finish. In the questionnaire, you will be asked to provide your opinions about the education system in Malaysia, the higher education barriers encountered by vocational students and suggestions to overcome such barriers.

Your participation is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Upon completion of the research, all questionnaires will be securely stored at the University of Tasmania. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

- i. Dr. David Moltow via email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser via email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham via email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 6C Introduction Letter for Questionnaires to VET-LSEG Students (below 18 year old)

Introduction Letter for Questionnaires Survey
(Phase I Category B2: Vocational students below 18 years old)

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is ‘Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective’ with the objective to examine the higher education barriers encounter by vocational students with low socioeconomic background in Malaysia and to provide suggestions how these barriers can be overcome to make higher education easier accessible to the students.

I would like to invite the student under your care to participate in this research project which requires the student to complete a Questionnaire that takes not more than 30 minutes to finish. In the questionnaires, the student will be asked to provide opinions about the education system in Malaysia, the higher education barriers encountered by vocational students and suggestions to overcome such barriers.

After completing the questionnaires, the student will also be invited to participate in a face-to-face interview with me, at the school premise during school hours, to discuss matters like the vocational trainings and progression opportunities for vocational students in Malaysia which will take approximately one hour to complete. A small template is attached in the questionnaires for the student to express his/her desire to participate in the interview and only students who meet the selection criteria will be contacted for interview.

The student’s participation is voluntary and the student is free to withdraw your participation at any time, for any reasons, without penalty. To ensure confidentiality, the student’s name will not be revealed directly or remotely in this study. Any information given by the student in the questionnaire will be used solely for the purpose of this research project. The information will be stored securely at the University of Tasmania and access to the information will be restricted only to the researchers and authorized personnel of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

Should you need further clarification of the study, please contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

- i. Dr. David Moltow via email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser via email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham via email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Chong Choon Lin
PhD Candidate

Appendix 6D Introduction Letter for Interview to CAs at VET Institutions

Introduction Letter for Research Interview

Phase II Category A: Chief Administrators of Vocational Colleges

Date: 20 March 2014

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by participating in a face-to-face interview which will take approximately one hour to complete. During the interview, you will be asked to express your opinions about the current education system in Malaysia, the higher education barriers encountered by vocational students and the suggestions to overcome such barriers. The interview will be conducted at a date and time negotiated for your convenience.

Your participation is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

1. Dr. David Moltow by email at David.Moltow@utas.edu.au
2. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
3. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 6E Introduction Letter for Interview to VET-LSEG Students 18 year old and above

Introduction Letter for Research Interview

Phase II Category B: Vocational Students (18 years old and above)

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by participating in a face-to-face interview which will take approximately one hour to complete. During the interview, you will be asked to express your opinions about the current education system in Malaysia, the higher education barriers encountered by vocational students and the suggestions to overcome such barriers. The interview will be conducted at a date and time negotiated for your convenience.

Your participation is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

1. Dr. David Moltow by email at David.Moltow@utas.edu.au
2. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
3. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 6F Introduction Letter for Interview to VET-LSEG Students below 18 Year Old

Introduction Letter for Research Interview

Phase II Category B2: Vocational Students below 18 years old(Guardian)

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite the student under your care to participate in this research project, by participating in a face-to-face interview which will take approximately one hour to complete. During the interview, the student will be asked to express their opinions about the current education system in Malaysia, the higher education barriers encountered by vocational students and the suggestions to overcome such barriers. The interview will be conducted at the school premises during school hours, at a date and time negotiated for their convenience.

The student's participation is voluntary and is free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, the student's name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If the student has concerns or complaints about the conduct of this study, the student is welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, the student is required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

1. Dr. David Moltow by email at David.Moltow@utas.edu.au
2. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
3. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 6G Introduction Letter for Interview to Representatives from HE Institutions

Introduction Letter for Research Interview

Phase II Category C&D: Registrars/Head of Schools from Higher Education Institutions

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by participating in a face-to-face interview which will take approximately one hour to complete. During the interview, you will be asked to express your opinions about the current education system in Malaysia, the higher education barriers encountered by vocational students and the suggestions to overcome such barriers. The interview will be conducted at a date and time negotiated for your convenience.

Your participation is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

1. Dr. David Moltow by email at David.Moltow@utas.edu.au
2. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
3. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 6H Introduction Letter for Interview to Representatives From MOE

Introduction Letter for Research Interview

Phase II Category E: Representatives from Ministry of Higher Education

Date: 20 March 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by participating in a face-to-face interview which will take approximately one hour to complete. During the interview, you will be asked to express your opinions about the current education system in Malaysia, the higher education barriers encountered by vocational students and the suggestions to overcome such barriers. The interview will be conducted at a date and time negotiated for your convenience.

Your participation is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information provided by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, you may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If you require further clarification about the study, you may contact me via email at clchong@utas.edu.au. Alternatively, you may also contact the Chief Investigator and Co-investigators of this study:

1. Dr. David Moltow by email at David.Moltow@utas.edu.au
2. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
3. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 7A Information Sheet for Questionnaires to CAs at VET institutions

INFORMATION SHEET SOCIAL SCIENCE/ HUMANITIES RESEARCH

Phase I Category A: Chief Administrator of Vocational College or Vocational School

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective.

1. Invitation

You are invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

2. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

3. Eligibility of participation

You are invited to participate in this study because you have met the selection criteria stated as follows:

- i) You are an employee with the Vocational College or Vocational School in Malaysia.
- ii) You are knowledgeable about student background, programme operations, student performance, education policies and future development of the institution which you are currently working with.

4. What does this study involve?

You will be asked to complete a Questionnaire consisting questions drawing from your personal knowledge and experience about:

- The background of students undergoing vocational education and training courses in your institution.
- The academic performance of vocational students.
- The general progression options of vocational students after completing vocational education and training courses at vocational school or colleges.
- The importance and relevance of higher education to vocational students.
- The general barriers to higher education encountered by vocational students with low socioeconomic background.
- Contributing factors to the barriers to higher education encountered by vocational students with low socioeconomic background.

- The assistance required by students to overcome barriers to higher education.
- The role of vocational college in helping vocational students to attain higher education.
- The role of a higher education institution or university in helping vocational students to progress in higher education.
- The role of government in helping vocational students to progress in higher education.
- The responsibility of vocational students in ensuring they progress in higher education.
- Recommendations that will contribute to the progression of vocational students with low socioeconomic background in higher education.

Your participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

5. Are there any possible benefits from participation in this study?

Your involvement allows you to express your opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. You will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, your involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the

conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

**Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.**

**Appendix 7B Information Sheet for Questionnaires to VET-LSEG Students at 18 Year Old
and Above**

**INFORMATION SHEET FOR
SOCIAL SCIENCE/ HUMANITIES RESEARCH
Phase I Category B: Vocational Students from Vocational Colleges**

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective.

1. Invitation

You are invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

2. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

3. Eligibility of participation

You are invited to participate in this study because you have met the selection criteria stated as follows:

- i) You have gone through at least one year of studies or training with the vocational college which you are currently studying with.
- ii) You are older than 16 years.

4. What does this study involve?

You will be asked to complete a Questionnaire consisting questions drawing from your personal knowledge and experience about:

- a. The background of students undergoing vocational education and training courses in your institution.
- b. The academic performance of vocational students.
- c. The general progression options of vocational students after completing vocational education and training courses at vocational school or colleges.
- d. The importance and relevance of higher education to vocational students.
- e. The general barriers to higher education encountered by vocational students with low socioeconomic background.

- f. Contributing factors to the barriers to higher education encountered by vocational students with low socioeconomic background.
- g. The assistance required by students to overcome barriers to higher education.
- h. The role of vocational college in helping vocational students to attain higher education.
- i. The role of a higher education institution or university in helping vocational students to progress in higher education.
- j. The role of government in helping vocational students to progress in higher education.
- k. The responsibility of vocational students in ensuring they progress in higher education.
- l. Recommendations that will contribute to the progression of vocational students with low socioeconomic background in higher education.

Your participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

5. Are there any possible benefits from participation in this study?

Your involvement allows you to express your opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. You will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, your involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

**Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.**

**Appendix 7C Information Sheet for Questionnaires to Parents/Guardians of VET-LSEG
students Below 18 Year Old**

**INFORMATION SHEET FOR
SOCIAL SCIENCE/ HUMANITITES RESEARCH**

Phase I Category B2: Vocational Students of Vocational College (below 18 years old)

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective.

1. Invitation

The student under your care is invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

3. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

3. Eligibility of participation

The student has been invited to participate in this study because they have met the selection criteria stated as follows:

- iii) They have undertaken at least one year of studies or training with the vocational college which you are currently studying with.
- iv) They are older than 16 years.

4. What does this study involve?

The student will be asked to complete a Questionnaire consisting questions drawing from their personal knowledge and experience about:

- a. The background of students undergoing vocational education and training courses in your institution.
- b. The academic performance of vocational students.
- c. The general progression options of vocational students after completing vocational education and training courses at vocational school or colleges.
- d. The importance and relevance of higher education to vocational students.
- e. The general barriers to higher education encountered by vocational students with low socioeconomic background.
- f. Contributing factors to the barriers to higher education encountered by vocational students with low socioeconomic background.

- g. The assistance required by students to overcome barriers to higher education.
- h. The role of vocational college in helping vocational students to attain higher education.
- i. The role of a higher education institution or university in helping vocational students to progress in higher education.
- j. The role of government in helping vocational students to progress in higher education.
- k. The responsibility of vocational students in ensuring they progress in higher education.
- l. Recommendations that will contribute to the progression of vocational students with low socioeconomic background in higher education.

The student's participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

The student's participation in this research project is voluntary and they are free to withdraw participation at any time, for any reason, without penalty. To ensure confidentiality, the student's name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by the student in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

5. Are there any possible benefits from participation in this study?

The student's involvement allows them to express their opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. They will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, their involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If you or the student would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you or the

student may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

**Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.**

Appendix 7D Information Sheet for Interview to CAs at VET institutions

INFORMATION SHEET FOR SOCIAL SCIENCE/ HUMANITITES RESEARCH Phase II Category A: Chief Administrators from Vocational Colleges

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective.

1. Invitation

You are invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

2. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

3. Eligibility of participation

You are invited to participate in this study because you have met the selection criteria stated as follow:

- i) You are an employee with the Vocational College or Vocational School selected for this study.
- ii) You are knowledgeable about student background, programme operations, student performance, education policies and future development of the institution which you are currently working with.

4. What does this study involve?

You will be asked to participate in a face-to-face interview with the researcher of approximately an hour's duration. With your permission, the interview will be digitally recorded. Once the interview has been transcribed, you will have the opportunity to review the transcript and amend if required. During the interview, you will be asked questions drawing from your personal knowledge and experience about:

- a. The background of students undergoing vocational education and training courses in your institution.
- b. The academic performance of vocational students.
- c. The general progression options of vocational students after completing vocational education and training courses at vocational school or colleges.
- d. The importance and relevance of higher education to vocational students.

- e. The general barriers to higher education encountered by vocational students with low socioeconomic background.
- f. Contributing factors to the barriers to higher education encountered by vocational students with low socioeconomic background.
- g. The assistance required by students to overcome barriers to higher education.
- h. The role of vocational college in helping vocational students to attain higher education.
- i. The role of a higher education institution or university in helping vocational students to progress in higher education.
- j. The role of government in helping vocational students to progress in higher education.
- k. The responsibility of vocational students in ensuring they progress in higher education.
- l. Recommendations that will contribute to the progression of vocational students with low socioeconomic background in higher education.

Your participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

5. Are there any possible benefits from participation in this study?

Your involvement allows you to express your opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. You will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, your involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.

Appendix 7E Information Sheet for Interview to VET-LSEG students

INFORMATION SHEET SOCIAL SCIENCE/ HUMANITIES RESEARCH

Phase II Category B: Vocational Students from Vocational Colleges (18 years old & above)

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective.

1. Invitation

You are invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

3. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

2. Eligibility of participation

You are invited to participate in this study because you have met the selection criteria stated as follows:

- i) You have gone through at least one year of studies or training with the vocational college which you are currently studying with.
- ii) You are 18 years or older.

3. What does this study involve?

You will be asked to participate in a face-to-face interview with the researcher of approximately an hour's duration. With your permission, the interview will be digitally recorded. Once the interview has been transcribed, you will have the opportunity to review the transcript and amend if required. During the interview, you will be asked questions drawing from your personal knowledge and experience about:

- a. The vocational education and training courses you are currently undergoing.
- b. The general progression options for vocational students after completing vocational education and training courses at vocational school or colleges.
- c. Your opinions about higher level education for vocational students.
- d. The importance and relevance of higher education to vocational students.
- e. The general barriers to higher education encountered by students.
- f. The contributing factors to the barriers to higher education.

- g. The assistance required by students to overcome barriers to higher education.

Your participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

4. Are there any possible benefits from participation in this study?

Your involvement allows you to express your opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. You will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, your involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

5. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

6. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.

**INFORMATION SHEET FOR
SOCIAL SCIENCE/ HUMANITIES RESEARCH
Phase II Category C&D: Registrar from Higher Education Institutions**

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. Invitation

You are invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

2. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

3. Eligibility of participation

You are invited to participate in this study because you have met the selection criteria stated as follows:

- i) You are an employee with the University or higher education institution selected for this study.
- ii) You are knowledgeable about student background, programme operations, student performance, education policies and future development of the institution which you are currently working with.

4. What does this study involve?

You will be asked to participate in a face-to-face interview with the researcher of approximately an hour's duration. With your permission, the interview will be digitally recorded. Once the interview has been transcribed, you will have the opportunity to review the transcript and amend if required. During the interview, you will be asked questions drawing from your personal knowledge and experience about:

- m. The background of students undergoing vocational education and training courses in your institution.
- n. The academic performance of vocational students.
- o. The general progression options of vocational students after completing vocational education and training courses at vocational school or colleges.
- p. The importance and relevance of higher education to vocational students.

- q. The general barriers to higher education encountered by vocational students with low socioeconomic background.
- r. Contributing factors to the barriers to higher education encountered by vocational students with low socioeconomic background.
- s. The assistance required by students to overcome barriers to higher education.
- t. The role of vocational college in helping vocational students to attain higher education.
- u. The role of a higher education institution or university in helping vocational students to progress in higher education.
- v. The role of government in helping vocational students to progress in higher education.
- w. The responsibility of vocational students in ensuring they progress in higher education.
- x. Recommendations that will contribute to the progression of vocational students with low socioeconomic background in higher education.

Your participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

5. Are there any possible benefits from participation in this study?

Your involvement allows you to express your opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. You will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, your involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at elchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- i. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- ii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

**Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.**

Appendix 7G Information Sheet for Interview to Representatives at Ministry of Education

INFORMATION SHEET FOR SOCIAL SCIENCE/ HUMANITIES RESEARCH Phase II Category E: Representative from Ministry of Education

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. Invitation

You are invited to participate in a research project focussing on the barriers to higher education encountered by vocational students from low socioeconomic background.

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Sharon Fraser and Associate Professor Dr Rosemary Callingham.

3. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

2. Eligibility of participation

You are invited to participate in this study because you have met the selection criteria stated as follow:

- i) You are an employee with the Ministry of Higher Education.
- ii) You are in-charge of administration and development of higher education or vocational education system in Malaysia.
- iii) You are knowledgeable about education policies and development strategies of higher education or vocational education system in the country.

3. What does this study involve?

You will be asked to participate in a face-to-face interview with the researcher of approximately an hour's duration. With your permission, the interview will be digitally recorded. Once the interview has been transcribed, you will have the opportunity to review the transcript and amend if required. During the interview, you will be asked questions drawing from your personal knowledge and experience about:

- a. The current higher education system in Malaysia, for example the operations, roles and responsibilities.
- b. The difference between vocational education and higher education.
- c. The gap between vocational education and higher education systems and how this gap can be eliminated.
- d. The effectiveness of vocational and higher education qualifications.

- e. General perception about higher education whether it is important for every individual to obtain higher education.
- f. Whether it is necessary for vocational students to progress for higher education.
- g. The current policies in relation to improving vocational students' participation in higher education.
- h. The strategies in relation to improving vocational students' participation in higher education.
- i. The higher education barriers or difficulties encountered by vocational students after completing their courses with vocational colleges in Malaysia.
- j. The factors contributing to the higher education barriers.
- k. Suggestions for overcoming these barriers or difficulties in order to make higher education more attainable to vocational students.

Your participation in this research project is voluntary and you are free to withdraw your participation at any time, for any reason, without penalty. To ensure confidentiality, your name will not be revealed directly or remotely in this study and pseudonyms will be used. Any information given by you in the questionnaire will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

6. Are there any possible benefits from participation in this study?

Your involvement allows you to express your opinions and insight regarding the barriers to higher education encountered by vocational students with low socioeconomic background in Malaysia. You will also be able to provide suggestions about how these barriers can be overcome in order to improve these students' accessibility to higher education. Hence, your involvement in the study will provide new insights into how higher education can be made more accessible to vocational students from low socioeconomic backgrounds.

4. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

5. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, you may also contact the Chief Investigator or Co-investigators for any concerns raised about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to you, via postal mail or email, which you may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If you have concerns or complaints about the conduct of this study, you may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, you may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.

Appendix 7H Information Sheet for Case Study

INFORMATION SHEET FOR SOCIAL SCIENCE/ HUMANITIES RESEARCH

Phase III: Higher Education selected for Case-Study

Title: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. Invitation

I am pleased to invite your prestigious institution to participate in a research project exploring the barriers encountered by vocational students from low socioeconomic background to higher education

The research project is conducted by Jacky Chong, a PhD student with Faculty of Education at the University of Tasmania, under the supervision of Dr David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham.

2. Purpose of this study

The purpose of this research project is to examine the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

3. Eligibility of participation

Your institution has been selected as it is one of the few institutions in Malaysia offering progression pathways for vocational students to higher learning. Your participation will greatly help in providing useful and relevant data that will contribute to making this study meaningful.

4. What does this study involve?

The research seeks to explore information based on the experiences and policies of the institution. The data generation required for this study will involve the following activities:

- A visit to the learning and training premises.
- An examination of programmes or courses.
- A discussion with relevant person / people about the operations and policies regarding progression pathways for vocational graduates.
- A discussion with relevant person / people about the barriers you believe are encountered by vocational students and the assistance that is provided to them to enable them to progress their studies.

With your permission, all discussions / interviews will be digitally recorded. Once the interview has been transcribed, you will have the opportunity to review the transcript and amend if required.

The participation of the institution in this research project is voluntary and the institution is free to withdraw participation at any time, for any reason, without penalty. To ensure confidentiality, the name of the institution will not be revealed directly or remotely in this study and pseudonyms will be used. Any information provided by the institution or collected from the institution during the case study will be used solely for the purpose of this research project and all information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

Upon completion of this research project, all information will be kept securely in a locked cabinet at the University of Tasmania for a period of 5 years. All information and records will be destroyed by the Chief Investigator at the end of 5 years.

5. Are there any possible benefits from participation in this study?

Your institution's involvement allows the researcher to examine an example of a higher education institution which offers pathways for vocational students to higher level learning, as well one that provides examples of students who have successfully achieved further qualifications. The examination helps to provide new insights into the barriers to higher education encountered by vocational students with low socioeconomic background (VET-LSEG), and how stakeholders, especially the higher education institutions, can contribute to the mitigation of these barriers and make higher education more accessible to VET-LSEG.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If the institute would like to discuss any aspect of this study, the institute may contact Jacky Chong via email at clchong@utas.edu.au or telephone at +613-6324 3792. Alternatively, the institute may also contact the Chief Investigator or Co-investigators for any concerns raise about this study:

- i. Dr. David Moltow by email at David.Moltow@utas.edu.au
- ii. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
- iii. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Once the data is analysed, a summary of the findings will also be delivered to the institute, via postal mail or email, which the institute may check and request amendments.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee as well as the Economic Planning Unit Malaysia. If the institute has concerns or complaints about the conduct of this study, the institute may contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the

person nominated to receive complaints from research participants. You will need to quote [H0013585] as reference while contacting the Executive Officer at HREC.

In addition, the institute may also contact the Economic Planning unit Malaysia via email at oridb@epu.gov.my or telephone +603-88723333. The Economic Planning Unit is the organization appointed in Malaysia to receive complaints from research participants.

**Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.**

Appendix 7I Introduction Letter for Case Study

Introduction Letter

Phase III: Case-Study

Date: 5 June 14

Dear sir/madam,

My name is Jacky Chong, a PhD student from the Faculty of Education at the University of Tasmania. I am currently conducting a research project as part of my doctoral studies under the supervision of Dr. David Moltow, Associate Professor Dr Sharon Fraser and Associate Professor Dr Rosemary Callingham. The title of the research project is '*Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective*' with the objective to examine the higher education barriers encountered by vocational students from low socioeconomic backgrounds in Malaysia, and to provide suggestions about how these barriers can be overcome to improve their accessibility to higher education.

I would like to invite you to participate in this research project, by contributing to case study focussing on a higher education institution in Malaysia which offers pathways to higher level education (i.e. Bachelor Degree studies), for students who have graduated from a vocational college or vocational school. Your institution has been selected because it fulfils the above criteria and will provide useful and relevant data that make this study meaningful. Thus, I request your assistance in allowing me to visit your prestigious institution to generate data, for approximately 3 days (or slightly longer if required) during office hours from 25 June 2014 to 6 July 2014 (you may suggest any consecutive 3 days at your convenience). The data generation will involve the following activities:

- A visit to the learning and training premises.
- An examination of programmes or courses.
- A discussion with relevant person / people (preferably programmes leaders or head of schools) about the operations and policies regarding progression pathways for vocational graduates.
- A discussion with relevant person / people (preferably programmes leaders or head of schools and students progressed from vocational schools) about the barriers you believe are encountered by vocational students and the assistance that is provided to them to enable them to progress their studies.

Your institution's participation is voluntary and may be withdrawn at any time, for any reason, without penalty. To ensure confidentiality, the name of the institution will not be revealed directly or remotely in this study and a pseudonym will be used. Any information provided during the case study will be used solely for the purpose of this research project. Any information provided will be stored securely at the University of Tasmania with access only available to the researchers of this research project.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee (HREC) as well as the Economic Planning Unit (EPU) in Malaysia. If you have concerns or complaints about the conduct of this study, you are welcome to contact the Executive Officer of the HREC (Tasmania) Network at +613 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer at HREC is the person nominated to receive complaints from research participants and while contacting the officer, you are required to quote [H0013585] as approval code for this research project.

In addition, the institution may also contact the Economic Planning unit Malaysia at +603-88723333 or via email at oridb@epu.gov.my. The Economic Planning Unit is the organization nominated in Malaysia to receive complaints from research participants.

If the institution requires further clarification about the study, the institution may contact me via email at clchong@utas.edu.au. Alternatively, the institution may also contact the Chief Investigator and Co-investigators of this study:

1. Dr. David Moltow by email at David.Moltow@utas.edu.au
2. Associate Professor Dr. Sharon Fraser by email at Sharon.Fraser@utas.edu.au
3. Associate Professor Dr. Rosemary Callingham by email at Rosemary.Callingham@utas.edu.au

Thank you very much for your co-operation.

Your sincerely,

Chong Choon Lin
PhD Candidate

Appendix 8A Consent Form for Questionnaires to CAs at VET institutions

CONSENT FORM (Questionnaires Survey)

Phase I Category A: Chief Administrators from Vocational Colleges

Title of Project: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves examining and identifying the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia, and the provision of recommendations for overcoming the barriers in order to make higher education more accessible to the students.
4. I understand that I will be participating in a questionnaire which will take not more than 30 minutes to complete and I am entitled to receive a copy of the summary of the findings after the collected data is analyzed.
5. I understand that all research data will be stored securely on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researcher will maintain my identity confidential and that any information I supply to the researcher will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.

Name of Participant:

Signature:

Date:

Statement by Investigator

<input type="checkbox"/>	I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation
<input type="checkbox"/>	The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Investigator:	Jacky Chong Choon Lin	
Signature of Investigator:	Jacky Chong Choon Lin	Date:

Appendix 8B Consent Form for Questionnaires to VET-LSEG students

CONSENT FORM (Questionnaires Survey)

Phase I Category B: Vocational Students from Vocational Colleges

Title of Project: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves examining and identifying the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia, and the provision of recommendations for overcoming the barriers in order to make higher education more accessible to the students.
4. I understand that I will be participating in a questionnaire which will take not more than 30 minutes to complete and I am entitled to receive a copy of the summary of the findings after the collected data is analyzed.
5. I understand that all research data will be stored securely on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researcher will maintain my identity confidential and that any information I supply to the researcher will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.

Name of Participant:

Signature:

Date:

Invitation to participate in One-Hour Interview

The researcher would like to invite you to participate in a one-hour face-to-face interview to talk more about the barriers to higher education and your opinions to overcome the barriers. Please indicate if you wish to participate in the interview by ticking the appropriate box below.

Yes

☐

No

☐

If you select 'Yes', you will go through a selection process and will be contacted for an one-hour interview if you meet the selection requirements. The interview will be conducted between you and the researcher within your school premise during school hours.

Statement by Investigator

<input type="checkbox"/>	I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation
<input type="checkbox"/>	The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Investigator: Jacky Chong Choon Lin

Signature of
Investigator:

Jacky Chong Choon Lin

Date: _____

Translated Version

Borang Kebenaran

Kajian Soalselidik (Fasa I Kategori B: Pelajar Vokasional di Kolej Vokasional)

Tajuk Projek: Mengatasi halangan yang dihadapi oleh pelajar pendidikan dan latihan vokasional (VET) dari latar belakang sosioekonomi yang rendah (LSEG) untuk memperolehi pendidikan tinggi: Satu perspektif dari Malaysia.

1. Saya telah membaca dan memahami 'Lembaran Maklumat' untuk projek ini.
2. Sifat dan kesan-kesan yang mungkin timbul dari kajian ini telah dijelaskan kepada saya.
3. Saya faham kajian ini melibatkan pemeriksaan dan pengenalpastian halangan yang dihadapi oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi rendah di Malaysia untuk memperolehi pendidikan tinggi serta penyediaan cadangan bagaimana halangan ini dapat diatasi untuk meningkatkan keupayaan mereka untuk mendapat pendidikan yang lebih tinggi.
4. Saya faham saya akan mengambil bahagian dalam soal selidik yang akan mengambil masa tidak lebih daripada 30 minit untuk selesai dan saya berhak untuk menerima satu salinan ringkasan penemuan kajiselidik selepas data yang dikumpul dianalisis.
5. Saya memahami bahawa semua data penyelidikan akan disimpan dengan selamat di premis University of Tasmania untuk sekurang-kurangnya lima tahun, dan akan kemudian dimusnahkan apabila tidak lagi diperlukan.
6. Saya berpuashati dengan jawapan yang telah diberikan kepada setiap pertanyaan yang saya ajukan berkenaan kajiselidik ini.
7. Saya bersetuju yang data penyelidikan yang diperolehi dari saya untuk kajian ini akan diterbitkan dengan syarat saya tidak boleh dikenal pasti sebagai peserta.
8. Saya faham penyelidik akan mengekalkan kerahsiaan identiti saya dan apa-apa maklumat yang saya bekalkan kepada penyelidik akan digunakan hanya bagi maksud penyelidikan.
9. Saya bersetuju untuk menyertai kajian ini dan memahami bahawa saya boleh menarik diri pada bila-bila masa tanpa apa-apa kesan, dan saya boleh meminta apa-apa data yang saya telah dibekalkan setakat ini ditarik balik daripada kajian ini.

Nama Peserta:

Tandatangan:

Tarikh:

Jemputan Menyertai Temuduga Satu Jam

Penyelidik ingin menjemput anda untuk mengambil bahagian dalam satu temuduga selama satu jam untuk bercakap lebih lanjut mengenai halangan yang dihadapi untuk memperolehi pendidikan tinggi dan memberi cadangan bagaimana halangan ini dapat diatasi. Sila nyatakan jika anda ingin menyertai temuduga dengan menandakan kotak di bawah yang berkenaan.

Ya

☐

Tidak

☐

Jika anda memilih 'Ya', anda akan melalui satu proses pemilihan dan akan dihubungi untuk temuduga satu jam jika anda memenuhi syarat-syarat pemilihan. Temuduga akan dijalankan antara anda dan penyelidik di premis sekolah anda pada waktu sekolah.

Penyataan dari Investigator

p	Saya telah menjelaskan tentang projek ini dan implikasi penyertaan kepada peserta sukarelawan ini dan saya yakin beliau bersetuju untuk menyertainya dan memahami implikasi penyertaan.
p	Peserta ini telah menerima Lembaran Maklumat yang mengandungi butir-butir tentang saya supaya peserta mempunyai peluang untuk menghubungi saya sebelum bersetuju untuk menyertai projek ini.

Nama Penyelidik

Jacky Chong Choon Lin

Tandatangan Penyelidik

Jacky Chong Choon Lin

Tarikh:

**Appendix 8C Consent Form for Questionnaires to Parents of VET-LSEG students Below
18 Year Old**

CONSENT FORM (Questionnaires Survey)

Phase I Category B: Formal guardian of vocational students below 18 years old

Title of Project: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves examining and identifying the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia, and the provision of recommendations for overcoming the barriers in order to make higher education more accessible to the students.
4. I understand to participate, the student under my care is required to complete a questionnaires prepared for this study which will take less than 30 minutes to complete and my child is entitled to receive a copy of the summary of the findings after the collected data is analyzed.
5. I understand that all research data will be securely stored on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from my child for the study may be published provided that the student under my care cannot be identified as a participant.
8. I understand that the researcher will maintain the identity of my child confidential and that any information my child supplies to the researcher will be used only for the purposes of the research.
9. I give consent for the student under my care, _____ (print the child's name), to participate in this investigation and understand that my child may withdraw at any time without any effect, and if my child so wish, may request that any data my child has supplied to date be withdrawn from the research.

Name of parent/formal guardian: _____

Signature: _____

Date: _____

Statement by Investigator

<input type="checkbox"/>	I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation
<input type="checkbox"/>	The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Investigator: Jacky Chong Choon Lin

Signature of
Investigator:

Jacky Chong Choon Lin

Date:

(Translated Version)

BORANG KEBENARAN

Fasa II: Temuduga Semi-Berstruktur (Ibubapa/Penjaga)

Tajuk Projek: Mengatasi halangan yang dihadapi oleh pelajar pendidikan dan latihan vokasional (VET) dari latar belakang sosioekonomi yang rendah (LSEG) untuk memperolehi pendidikan tinggi: Satu perspektif dari Malaysia.

1. Saya telah membaca dan memahami 'Lembaran Maklumat' untuk projek ini.
2. Sifat dan kesan-kesan yang mungkin timbul dari kajian ini telah dijelaskan kepada saya.
3. Saya faham kajian ini melibatkan pemeriksaan dan pengenalpastian halangan yang dihadapi oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi rendah di Malaysia untuk memperolehi pendidikan tinggi serta penyediaan cadangan bagaimana halangan ini dapat diatasi untuk meningkatkan keupayaan mereka untuk mendapat pendidikan yang lebih tinggi.
4. Saya faham pelajar di bawah jagaan saya akan mengambil bahagian dalam temuduga yang akan mengambil masa satu jam untuk selesai. Saya faham bahawa wawancara ini akan dirakamkan, dan pelajar di bawah jagaan saya berhak menerima satu salinan rakaman tersebut yang beliau boleh mengedit atau mengubah suai jika saya mahu.
5. Saya memahami bahawa semua data penyelidikan akan disimpan dengan selamat di premis University of Tasmania untuk sekurang-kurangnya lima tahun, dan akan kemudian dimusnahkan apabila tidak lagi diperlukan.
6. Saya berpuashati dengan jawapan yang telah diberikan kepada setiap pertanyaan yang saya ajukan berkenaan kajiselidik ini.
7. Saya bersetuju yang data penyelidikan yang diperolehi dari pelajar di bawah jagaan saya untuk kajian ini akan diterbitkan dengan syarat beliau tidak boleh dikenal pasti sebagai peserta.
8. Saya faham penyelidik akan mengekalkan kerahsiaan identiti pelajar dibawah jagaan saya dan apa-apa maklumat yang beliau bekalkan kepada penyelidik akan digunakan hanya bagi maksud penyelidikan.
9. Saya membenarkan pelajar di bawah jagaan saya, _____ (sila tulis nama pelajar), menyertai kajian ini dan memahami bahawa beliau boleh menarik diri pada bila-bila masa tanpa apa-apa kesan, dan beliau boleh meminta apa-apa data yang dia telah bekalkan setakat ini ditarik balik daripada kajian ini.

Nama Ibubapa / Penjaga Formal:

Tandatangan:

Tarikh:

Kenyataan oleh Penyelidik

P	Saya telah menjelaskan tentang projek ini dan implikasi penyertaan kepada peserta sukarelawan ini dan saya yakin beliau bersetuju untuk menyertainya dan memahami implikasi penyertaan.
P	Peserta ini telah menerima Lembaran Maklumat yang mengandungi butir-butir tentang saya supaya peserta mempunyai peluang untuk menghubungi saya sebelum bersetuju untuk menyertai projek ini.

Nama Penyelidik: Jacky Chong Choon Lin

Appendix 8D Consent Form for Interview

CONSENT FORM

Phase II: Semi-Structured Interview

Title of Project: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves examining and identifying the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia, and the provision of recommendations for overcoming the barriers in order to make higher education more accessible to the students.
4. I understand that I will be participating in face-to-face interview of approximately one hour's duration. I understand that the interview will be audio-taped with my permission, and I am entitled to receive a copy of the transcript, which I may edit or modify if I wish.
5. I understand that all research data will be stored securely on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researcher will maintain my identity confidential and that any information I supply to the researcher will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.

Name of Participant:

Signature:

Date:

Statement by Investigator

<input type="checkbox"/>	I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation
--------------------------	---

<input type="checkbox"/>	The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.
--------------------------	---

Name of Investigator: Jacky Chong Choon Lin

Signature of
Investigator:

Jacky Chong Choon Lin

Date:

(Translated Version)
BORANG KEBENARAN
Fasa II: Temuduga Semi-Berstruktur

Tajuk Projek: Mengatasi halangan yang dihadapi oleh pelajar pendidikan dan latihan vokasional (VET) dari latar belakang sosioekonomi yang rendah (LSEG) untuk memperolehi pendidikan tinggi: Satu perspektif dari Malaysia.

1. Saya telah membaca dan memahami 'Lembaran Maklumat' untuk projek ini.
2. Sifat dan kesan-kesan yang mungkin timbul dari kajian ini telah dijelaskan kepada saya.
3. Saya faham kajian ini melibatkan pemeriksaan dan pengenalpastian halangan yang dihadapi oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi rendah di Malaysia untuk memperolehi pendidikan tinggi serta penyediaan cadangan bagaimana halangan ini dapat diatasi untuk meningkatkan keupayaan mereka untuk mendapat pendidikan yang lebih tinggi.
4. Saya faham saya akan mengambil bahagian dalam temuduga yang akan mengambil masa satu jam untuk selesai. Saya faham bahawa wawancara ini akan dirakamkan, dan saya berhak menerima satu salinan rakaman tersebut yang saya boleh mengedit atau mengubah suai jika saya mahu.
5. Saya memahami bahawa semua data penyelidikan akan disimpan dengan selamat di premis University of Tasmania untuk sekurang-kurangnya lima tahun, dan akan kemudian dimusnahkan apabila tidak lagi diperlukan.
6. Saya berpuashati dengan jawapan yang telah diberikan kepada setiap pertanyaan yang saya ajukan berkenaan kajiselidik ini.
7. Saya bersetuju yang data penyelidikan yang diperolehi dari saya untuk kajian ini akan diterbitkan dengan syarat saya tidak boleh dikenal pasti sebagai peserta.
8. Saya faham penyelidik akan mengekalkan kerahsiaan identiti saya dan apa-apa maklumat yang saya bekalkan kepada penyelidik akan digunakan hanya bagi maksud penyelidikan.
9. Saya bersetuju untuk menyertai kajian ini dan memahami bahawa saya boleh menarik diri pada bila-bila masa tanpa apa-apa kesan, dan saya boleh meminta apa-apa data yang saya telah dibekalkan setakat ini ditarik balik daripada kajian ini.

Nama Peserta:

Tandatangan:

Tarikh:

Kenyataan oleh Penyelidik

P	Saya telah menjelaskan tentang projek ini dan implikasi penyertaan kepada peserta sukarelawan ini dan saya yakin beliau bersetuju untuk menyertainya dan memahami implikasi penyertaan.
P	Peserta ini telah menerima Lembaran Maklumat yang mengandungi butir-butir tentang saya supaya peserta mempunyai peluang untuk menghubungi saya sebelum bersetuju untuk menyertai projek ini.

Nama Penyelidik: Jacky Chong Choon Lin

Tandatangan Penyelidik :

Appendix 8E Consent Form for Interview to Parents/Guardians of VET-LSEG Students

CONSENT FORM

Phase II: Semi-Structured Interview (Formal Guardian for Students below 18 years old)

Title of Project: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves examining and identifying the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia, and the provision of recommendations for overcoming the barriers in order to make higher education more accessible to the students.
4. I understand that the student under my care will be participating in face-to-face interview of approximately one hour's duration. I understand that the interview will be audio-taped with the student under my care's permission, and they are entitled to receive a copy of the transcript, which they may edit or modify if they wish.
5. I understand that all research data will be stored securely on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from my child for the study may be published provided that my child cannot be identified as a participant.
8. I understand that the researcher will maintain my child's identity confidential and that any information I supply to the researcher will be used only for the purposes of the research.
9. I give consent for the student under my care, _____ (please print the name of the child here) to participate in this investigation and understand that my child may withdraw at any time without any effect, and if my child so wish, may request that any data my child has supplied to date be withdrawn from the research.

Name of Parent or Formal Guardian: _____

Signature: _____

Date: _____

Statement by Investigator

<input type="checkbox"/>	I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation
<input type="checkbox"/>	The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Investigator: Jacky Chong Choon Lin

Signature of
Investigator:

Jacky Chong Choon Lin

Date:

(Translated Version)
BORANG KEBENARAN
Fasa II: Temuduga Semi-Berstruktur (Ibubapa/Penjaga)

Tajuk Projek: Mengatasi halangan yang dihadapi oleh pelajar pendidikan dan latihan vokasional (VET) dari latar belakang sosioekonomi yang rendah (LSEG) untuk memperolehi pendidikan tinggi: Satu perspektif dari Malaysia.

1. Saya telah membaca dan memahami 'Lembaran Maklumat' untuk projek ini.
2. Sifat dan kesan-kesan yang mungkin timbul dari kajian ini telah dijelaskan kepada saya.
3. Saya faham kajian ini melibatkan pemeriksaan dan pengenalpastian halangan yang dihadapi oleh pelajar-pelajar vokasional dari latar belakang sosioekonomi rendah di Malaysia untuk memperolehi pendidikan tinggi serta penyediaan cadangan bagaimana halangan ini dapat diatasi untuk meningkatkan keupayaan mereka untuk mendapat pendidikan yang lebih tinggi.
4. Saya faham pelajar di bawah jagaan saya akan mengambil bahagian dalam temuduga yang akan mengambil masa satu jam untuk selesai. Saya faham bahawa wawancara ini akan dirakamkan, dan pelajar di bawah jagaan saya berhak menerima satu salinan rakaman tersebut yang beliau boleh mengedit atau mengubah suai jika saya mahu.
5. Saya memahami bahawa semua data penyelidikan akan disimpan dengan selamat di premis University of Tasmania untuk sekurang-kurangnya lima tahun, dan akan kemudian dimusnahkan apabila tidak lagi diperlukan.
6. Saya berpuashati dengan jawapan yang telah diberikan kepada setiap pertanyaan yang saya ajukan berkenaan kajiselidik ini.
7. Saya bersetuju yang data penyelidikan yang diperolehi dari pelajar di bawah jagaan saya untuk kajian ini akan diterbitkan dengan syarat beliau tidak boleh dikenal pasti sebagai peserta.
8. Saya faham penyelidik akan mengekalkan kerahsiaan identiti pelajar dibawah jagaan saya dan apa-apa maklumat yang beliau bekalkan kepada penyelidik akan digunakan hanya bagi maksud penyelidikan.
9. Saya membenarkan pelajar di bawah jagaan saya, _____ (sila tulis nama pelajar), menyertai kajian ini dan memahami bahawa beliau boleh menarik diri pada bila-bila masa tanpa apa-apa kesan, dan beliau boleh meminta apa-apa data yang dia telah bekalkan setakat ini ditarik balik daripada kajian ini.

Nama Ibubapa / Penjaga Formal:

Tandatangan:

Tarikh:

Kenyataan oleh Penyelidik

P	Saya telah menjelaskan tentang projek ini dan implikasi penyertaan kepada peserta sukarelawan ini dan saya yakin beliau bersetuju untuk menyertainya dan memahami implikasi penyertaan.
P	Peserta ini telah menerima Lembaran Maklumat yang mengandungi butir-butir tentang saya supaya peserta mempunyai peluang untuk menghubungi saya sebelum bersetuju untuk menyertai projek ini.

Nama Penyelidik: Jacky Chong Choon Lin

Appendix 8F Consent Form for Case Study

CONSENT FORM

Phase III: Case Study

Title of Project: Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves examining and identifying the higher education barriers encountered by vocational students with low socioeconomic background in Malaysia, and the provision of recommendations for overcoming the barriers in order to make higher education more accessible to the students.
4. I understand that the Institute will be participating in a case study which will be held within the premises of the Institute for a period of approximately three (3) days.. During the case study, all interviews will be audio-taped with the Institute's permission, and the institute is entitled to receive a copy of the transcript, which the Institute may edit or modify if it wishes.
5. I understand that all research data will be stored securely on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that the Institute has asked have been answered to the Institute's satisfaction.
7. I agree that research data gathered from the institute for the study may be published provided that the Institute cannot be identified as a participant.
8. I understand that the researcher will maintain the identity of the Institute confidential and that any information the Institute supplies to the researcher will be used only for the purposes of the research.
9. The Institute agree to participate in this investigation and understand that the Institute may withdraw at any time without any effect, and if the Institute so wishes, may request that any data the Institute has supplied to date be withdrawn from the research.

Name of Participant:

Signature:

Date:

Statement by Investigator

	I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation
	The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Investigator: Jacky Chong Choon Lin

Signature of
Investigator:

Jacky Chong Choon Lin

Date:

**Appendix 9 Ethics Approval from Northern Tasmania Social Sciences Human Research
Ethics Committee**

Social Science Ethics Officer
Private Bag 01 Hobart
Tasmania 7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148
Katherine.Shaw@utas.edu.au



HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

18 December 2013

Dr David Moltow
Faculty of Education
Private Bag 88

Student Researcher: Choon Lin Chong

Sent via email

Dear Dr Moltow

Re: FULL ETHICS APPLICATION APPROVAL
Ethics Ref: **H0013585 - Overcoming barriers to higher education for vocational education and training (VET) students with low socioeconomic background (LSEG): A Malaysian Perspective**

We are pleased to advise that the Tasmania Social Sciences Human Research Ethics Committee approved the above project on 17 December 2013.

This approval constitutes ethical clearance by the Tasmania Social Sciences Human Research Ethics Committee. The decision and authority to commence the associated research may be dependent on factors beyond the remit of the ethics review process. For example, your research may need ethics clearance from other organisations or review by your research governance coordinator or Head of Department. It is your responsibility to find out if the approval of other bodies or authorities is required. It is recommended that the proposed research should not commence until you have satisfied these requirements.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.

A PARTNERSHIP PROGRAM IN CONJUNCTION WITH THE DEPARTMENT OF HEALTH AND HUMAN SERVICES

2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.
3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.
5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. **Failure to submit a Progress Report will mean that ethics approval for this project will lapse.**
6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely

Katherine Shaw
Ethics Officer
Tasmania Social Sciences HREC

**Appendix 10 Ethics Approval from Research Promotion and Co-Ordination Committee,
Economic Planning Unit Malaysia**



UNIT PERANCANG EKONOMI
Economic Planning Unit
Jabatan Perdana Menteri
Prime Minister's Department
Block B5 & B6
Pusat Pentadbiran Kerajaan Persekutuan
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CHONG CHOON LIN
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Australia
Email: clchong@utas.edu.au

Ruj. Tuan:
Your Ref.:

Ruj. Kami: UPE: 40/200/19/3070
Our Ref.:

Tarikh:
Date: 07 April 2014

APPLICATION TO CONDUCT RESEARCH IN MALAYSIA

With reference to your application, I am pleased to inform you that your application to conduct research in Malaysia has been *approved* by the **Research Promotion and Co-Ordination Committee, Economic Planning Unit, Prime Minister's Department**. The details of the approval are as follows:

Researcher's name	:	CHONG CHOON LIN
Passport No./ I.C No	:	720704-12-5414
Nationality	:	MALAYSIA
Title of Research	:	"THE COLLABORATION BETWEEN HIGHER LEARNING INSTITUTION AND VACATIONAL EDUCATION AND TRAINING SYSTEM MAKES HIGHER EDUCATION MORE ACCESSIBLE TO LOW SOCIOECONOMIC GROUP. A MALAYSIAN PERSPECTIVE".
Period of Research Approved	:	4 YEARS

2. Please collect your Research Pass in person from the Economic Planning Unit, Prime Minister's Department, Parcel B, Level 4 Block B5, Federal Government Administrative Centre, 62502 Putrajaya, Malaysia and bring along two (2) colour passport size photographs.

3. I would like to draw your attention to the undertaking signed by you that you will submit without cost to the Economic Planning Unit the following documents:

- a) A brief summary of your research findings on completion of your research and before you leave Malaysia; and
- b) Three (3) copies of your final dissertation/publication.

4. Lastly, please submit a copy of your preliminary and final report directly to the State Government where you carried out your research. Thank you.

Yours sincerely,

(MUNIRAH BT. ABD MANAN)

For Director General,
Economic Planning Unit.
E-mail: munirah@epu.gov.my
Tel: 88882809
Fax: 88883798

ATTENTION

This letter is only to inform you the status of your application and **cannot be used as a research pass.**

Appendix 11 Factor Analysis on Progression Options

Summarised Results of Factor Analysis on Progression Options

	Loadings			
	Factor 1	Factor 2	Factor 3	Communality
POh-Met HE institutions about HE	.896	.170	-.036	.760
POf-Provided info about HE	.794	.006	.157	.690
Poi2-Met employers about work	-.791	-.009	.186	.612
POg2-Provided info about work	-.734	.288	.040	.700
POe-Provided finances and supports to pursue HE	.632	-.073	.266	.553
POb2-Work after VET	.091	.930	-.027	.845
POd2-Advised to work after VET	-.097	.862	.023	.782
POc-Advised to pursue HE after VET	-.004	-.67	.866	.772
POa-Puruse HE after VET	.011	.056	.854	.719
% of Total Variance	38.1	18.2	15.1	
Total Variance			71.5%	
KMO			0.697	

Appendix 12 Factor Analysis on Discouraging Factors

Summarised Results for *Factor Analysis Table for Discouraging Factors*

	Loadings			Communality
	Factor 1	Factor 2	Factor 3	
DFk-Different teaching styles	.957	-.018	-.090	.829
DFl-Different assessment styles	.879	-.008	-.072	.712
DFo-HE application procedures	.795	-.072	.025	.602
DFj-HE is too difficult	.733	.153	.045	.701
DFm-previous dropout rate from HE	.633	.155	.129	.623
DFi-Difficulty in accessing HE	.523	.121	.225	.527
DFf-Lack of interest in HE	.030	.877	-.065	.760
DFd-HE is not important & beneficial	.076	.814	-.221	.640
DFc-HE is irrelevant	-.027	.690	.213	.597
DFh-Lack of progression pathways	.046	.519	.261	.463
DFg-lack of confidence	.433	.480	.054	.652
DFe-Lack of info about HE	.062	.446	.299	.423
DFb-Family & social discouragement	.322	.362	.139	.436
DFp-Difficulty in getting acceptance	-.086	.138	.842	.732
DFa-Financial difficulties	.059	.045	.722	.591
DFn-Difficulty in getting HE offer	.382	-.240	.677	.714
% of Total Variance	45.4	9.7	7.4	
Total Variance	62.5%			

Appendix 13 Oneway ANOVA of Variance of Aspiration by Students' Perceptions about FD

Summarised Results for One-Way Analysis of Variance of Aspiration by Students' Perceptions about FD

Source	df	SS	MS	F	P
Between groups	4	7.21	1.80	1.10	.36
Within groups	115	188.09	1.64		
Total	119	195.30			

Appendix 14 Pearson's Product-Moment Correlations for Financial Assistances with Aspiration for HE

Summarised Results for Pearson's Product-Moment Correlations for Financial Assistances with Students' Aspiration for HE

Variables	M(SD)	Financial Assistances	Aspiration for HE
Financial Assistances	13.33(1.73)		.30
Aspiration for HE	8.65(1.28)	.30	

N=120. *p<0.01

Appendix 15 Univariate Analysis of Variance on Students' Aspiration for HE by Parents' Education Level

Summarised Results for Univariate Analysis of Variance on Students' Aspiration for HE by Parents'

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Father's* Mother's Edu Level	10	7.69	.77	.47	.91
Father's Edu Level	4	1.20	.30	.18	.95
Mother's Edu. Level	4	4.79	1.20	.73	.57
Error	101	1.64	1.64		
Total	119	195.30			

Note. N=120, df=degrees of freedom, SS=Sum of Squares, MS=Mean Square.

Appendix 16 One-Way Analysis of Variance of Students' Aspiration for HE by Impact of Peers' Discouragement

Summarised Results of One-Way Analysis of Variance of Aspiration by Impact of Peers' Discouragement

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Between groups	4	10.10	2.57	1.57	.18
Within groups	115	185.20	1.61		
Total	119	195.30			

Appendix 17 One-Way Analysis of Variance of Students' Aspiration for HE by EFg-Importance and Relevance of HE

Summarised Results for One-Way ANOVA of Aspirations by EFg-Importance and Relevance of HE

Source	df	SS	MS	F	P
Between groups	3	72.62	24.21	22.89	.00
Within groups	116	122.68	1.06		
Total	119	195.30			

Appendix 18 One-Way ANOVA of Students' Aspiration for HE by PO-Lack of Progression Pathways

Summarised Results for One-Way ANOVA of Aspiration by PO-Lack of Progression Pathways

Source	df	SS	MS	F	P
Between groups	4	13.57	3.40	2.15	.08
Within groups	114	179.89	1.58		
Total	118	193.46			